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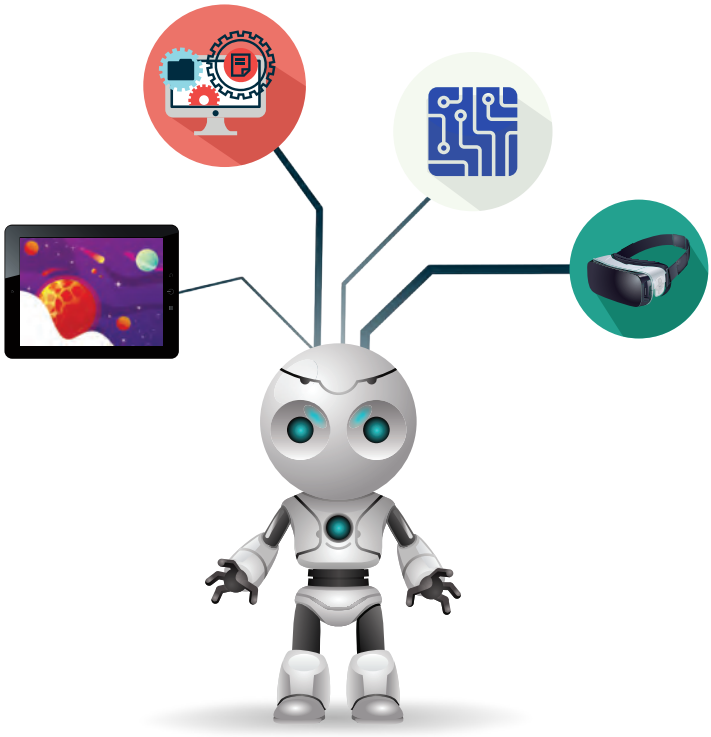
Knowledge beyond horizons

SMARTBYTE

A Course in Computer Science

Book 5



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Preface

Tell me and I forget. Teach me and I remember. Involve me and I learn.

— Benjamin Franklin

To enable children learn with ease, it's important to involve them and make learning enjoyable. It is often felt that children nowadays are tech-savvy (or rather gadget-savvy). But at the same time, we need to also ensure that they become familiar with the know-how of the technology. **SmartByte**, a new course in computer science designed for classes 1 to 8, lets them learn the concepts behind the technology and apply them. To make learning more engaging, it seamlessly integrates other subjects with computer science. It has a learner-centric practice-oriented approach and includes up-to-date developments.

The course emphasizes on the tools and their uses which will help learners explore, comprehend, and apply rather than the user-manual approach followed in most computer science books. It covers open-source software programs, such as Tux Paint, Scratch, Python, GIMP, and Synfig, to provide children ample scope to experiment with computer programs.

The salient features of the course are as follows:

- **Remember**—a simple fact that learners should remember
- **Quick Tip**—an alternative or short method to do an activity
- **Did You Know**—an additional piece of information related to a topic
- **Checkpoint**—in-text questions to assess the learner's understanding
- **Quick Learn**—a short activity linking a concept to its application
- **Key Terms**—list of important terms
- **Project**—activities to encourage application of the concepts in real-life situations and link computer science to other subjects
- **Lab Activity**—activities to enhance learning by doing
- **Explore More**—gives learners opportunities to go beyond the textbook
- **Notes for the Teacher**—useful tips for the teacher

The course is supplemented with comprehensive **teacher's manuals** with teaching aids to facilitate classroom transactions. Further, an easy-to-use **learning app** provides children support material and gives them instant access to learning and assessment resources.

The course will surely help children assimilate the concepts with ease and make learning of computer science enjoyable.

Key Features

Remember

On the Zoom Slider, you can increase the view size by clicking on (+) and decrease the view size by clicking on (–).

A useful, simple fact that learners should remember

Did You Know?

The touch-enabled devices have a touch sensor over the glass screen. It helps the user to give input.

An additional piece of information related to a topic

Quick Learn

There are various stamps of animals under the Stamp tool. Sort them into herbivores, carnivores, and omnivores.

A short activity linking a concept to its application

An alternative or short method to do an activity

Quick Tip

Remember the following keyboard shortcuts—

Align Left: Ctrl + L
Center: Ctrl + E
Align Right: Ctrl + R
Justify: Ctrl + J

Checkpoint

Complete the following table by writing the task or keyboard shortcut.

Task	Keyboard Shortcut
To open a new file	
	Ctrl + O
To save a file	
To close the file	
	Ctrl + P

In-text questions to assess learners' understanding

Key Terms

Font	A set of characters, numbers, or symbols designed in a particular style with a given size
Formatting	Changing the appearance of the text in a document
Highlighting	Adding a coloured background to the selected text
Alignment	A way of positioning the text along the left and right margins

List of important terms

Application-based Questions

1. Saira's father is a software engineer. He has a laptop that has run out of the storage space. How can he increase the storage space? Which device(s) can he connect to do so?

Assignments to check the application of the concepts taught

Lab Activity

1. Draw the water cycle using different tools and colours in Tux Paint.
2. Create a scene of any place, such as a market, playground, or garden in Tux Paint. You can use the combination of various tools. Label the things you have drawn.

Enhances learning by doing

Project

1. Given below are some machines. Write the input, processing, and output stages of the following machines. Collect the pictures of these machines from newspapers or magazines and paste them on a chart paper.

   a) Washing machine b) Calculator c) Music System

   d) Sharpener e) Toaster

Encourages application of concepts in real-life situations and links computer science with other subjects

Useful tips for the teacher

Notes for the Teacher

- Encourage students to write paragraphs on different subjects in Word.
- Demonstrate how to cut, copy, and paste text and how it saves time.

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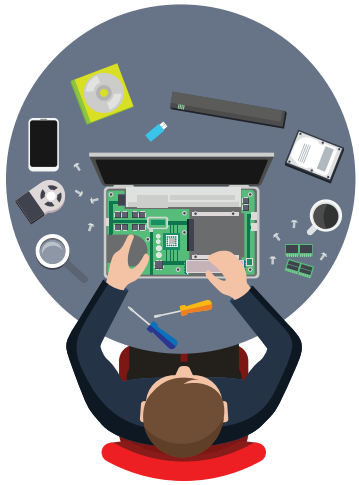
CHAPTER

1 Evolution of Computers

After going through this chapter, you will be able to—

- **list** early computing devices;
- **classify** computers in terms of their generations; and
- **discuss** the latest trends in computer technology.



Samarth's father owns a computer service centre. It is Saturday, and Samarth is going along with his father to the service centre. There, he sees different types of computers.

'Do you repair laptops also?' asks Samarth.

'Yes, I repair all types of computers—laptops, desktops, and tablets,' his father answers.

He then takes out his toolbox and opens one of the CPU cabinets. While he is keenly observing his father, he notices various parts inside the CPU cabinet. He quickly recalls the different parts inside the CPU box—motherboard, power supply, processor, RAM, ROM, and many other parts. He also notices some ports at the back of the CPU cabinet to which other devices, such as mouse, monitor, and keyboard, are connected.

He wonders how all these parts are connected in the box. He comes back home. He has many questions to ask to his computer teacher, Ms Sangeeta Gupta.

It is Monday, and Samarth goes to his school. He was eagerly waiting for the computer class. Finally it's time for the computer class. In the class, Samarth asks his computer teacher, Ms Gupta, these questions:

'How did computers come into being?', 'Who made the first computer?', and 'Was it the same as the computers we see today?'

Ms Gupta assures Samarth that all his questions will be answered.

'Let me first ask you, what do you understand by a computer?' asks Ms Gupta.

'A computer is an electronic machine that can store, retrieve, and process data,' tells Samarth.

Ms Gupta appreciates Samarth. She tells the class that before the invention of the automated electronic machines, the term 'computer' was used to refer to the people who performed calculations. This was a time-consuming and tedious task. It would often lead to human errors.

She further adds, 'Efforts were made to devise ways to perform calculations with speed and accuracy. This led to the development of various computing devices, which gradually paved the way for modern computers'.

The children are thrilled to learn about the history of computers.

Abacus

Ms Gupta explains to the class how in ancient times people used to count and do calculations using stones.

Later, the abacus was invented to aid the calculation process. It was one of the earliest calculating devices used to count large numbers and perform mathematical operations of addition and subtraction. Ms Gupta then tells the class that one of the earliest forms of abacuses consisted of a wooden board with marked lines on which counters were moved.

'Today's abacus consists of a wooden frame with rods for sliding beads,' she tells the class.

Himanshu asks, 'Are abacuses still in use?'

'Yes! These are still being used in many countries, such as China, Japan, and India,' replies Ms Gupta.

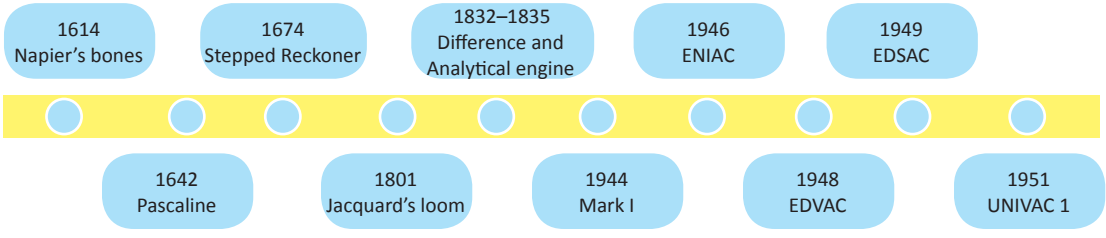
She then draws a timeline on the whiteboard to show the development of various machines.

Fig. 1.1 Abacus

Quick Learn

Open the website—https://www.wikihow.com/Use-an-Abacus

Take an abacus and learn how it is used to do calculations.



'Let me take you through a fascinating journey of computers,' says Ms Gupta. She then goes on to explain how continuous inventions finally led to the development of modern computer.

Napier's Bones

John Napier, a Scottish mathematician, invented a calculating device in 1614, called **Napier's bones**, for the multiplication of large numbers.

Napier's bones consisted of a set of rectangular rods. Each rod is marked with ten squares. The first square at the top was marked with a number between one and nine. The rest of the squares on the rod were divided into two equal halves by a diagonal line. These squares down the length contained multiples of the number at the top.

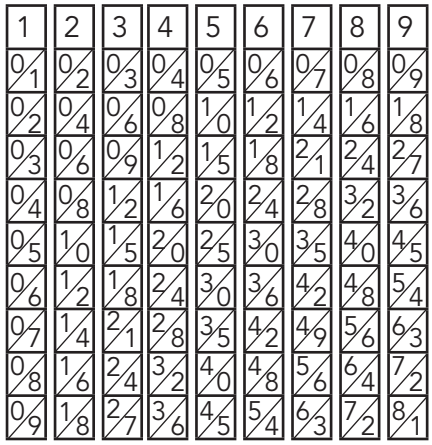


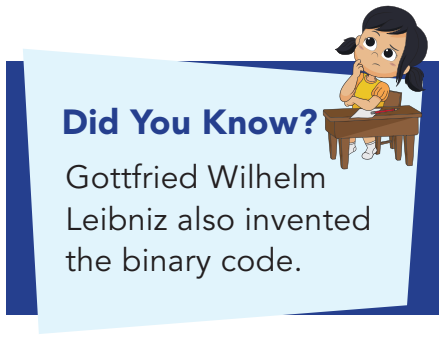
Fig. 1.2 Napier's bones

Pascal's Calculator

Blaise Pascal was a French mathematician who invented an arithmetic machine in 1642. This calculating machine was known as the **Pascaline**. It was used to add and subtract numbers. The numbers were entered by manipulating its dials. There were wheels located along the bottom of the machine. To add numbers, the wheels were turned clockwise. To subtract, the wheels were turned anticlockwise.

Step Reckoner

In 1674, Gottfried Wilhelm Leibniz built a calculator that could add, multiply, subtract, divide, and even find square roots. He named the calculator 'step reckoner' as it used stepped drums. A stepped drum is a cylinder with teeth of increasing lengths around its edge.



Jacquard's Loom

In 1801, Joseph Marie Jacquard, a French inventor, weaver, and merchant invented a power loom for weavers. It could weave fabric designs. The instructions to weave designs were given using wooden punched cards. The threads movements were controlled by the holes in the cards.

Difference Engine

In the nineteenth century, Charles Babbage invented a steam-driven machine called difference engine. It was as big as the size of a room. It could calculate tables of numbers and store results for later use. Though it is considered the first mechanical computer, Charles Babbage could not complete it.

Analytical Engine

Charles Babbage later came up with a new idea of designing a general-purpose computing machine, called analytical engine. This machine was to have the following four components:

- The *mill*, which would be the calculating unit
- The *store*, which would hold data prior to the processing
- The *reader*, an input device
- The *printer*, an output device

The analytical engine was to be the world's first fully-programmed, automatic mechanical computer. Unfortunately, Charles Babbage was not able to complete the project. However, the design of the analytical engine proved to be an important step in the evolution of computers. The basic framework of today's computers is derived from Charles' analytical engine. That is why Charles Babbage is considered the 'Father of computing'.

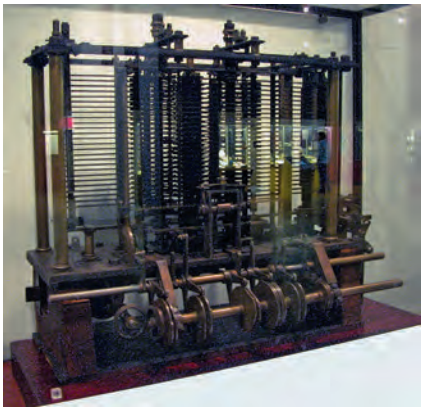


Fig. 1.3 Analytical engine

Did You Know?

Ada Lovelace worked with Charles Babbage. She wrote the first program for the analytical engine. She is known as the 'first programmer'.

Mark 1

In the year 1944, Harvard Aiken, a physics professor, designed a calculating machine. It was built by IBM. The machine was about 15 metres long. It could perform a calculation in three to five seconds and was known as the first fully automatic calculator.

ENIAC

ENIAC stands for 'electronic numerical integrator and computer'. It was the first general-purpose electronic digital computer, built by John Mauchly and J. Presper Eckert, Jr., in 1946.

ENIAC was the most powerful calculating device of the time.

Fig. 1.4 ENIAC

EDVAC

EDVAC stands for 'electronic discrete variable automatic computer'. It was proposed by John Mauchly and J. Presper Eckert in 1944 even before ENIAC came into being. It was developed in 1948. It used binary number system rather than decimal. It could store data and instructions which made calculations faster.

EDSAC

EDSAC stands for 'electronic delay storage automatic computer'. It was developed by MV Wilkes in 1949 at the University of Cambridge. It was the first computer to store a program and could perform calculations in milliseconds.

UNIVAC 1

UNIVAC stands for 'universal accounting machine'. It was developed by John Mauchly and J. Presper Eckert in the year 1951. It was the first commercial computer. The machine weighed 13,000 kilograms approximately. It was the first machine to handle both numeric and text data.

Checkpoint

Answer the following questions.

1. Who is known as the Father of computing?
2. Which is the earliest calculating device?
3. Which was the first electronic digital computer?
4. Name the machine developed by Wilhelm Gottfried Leibniz.
5. Write about the inventions of Charles Babbage.

Generations of Computers

Ms Gupta now tells the children that the evolution of computers is grouped into five generations—

- First-generation computers (1940–1956)
- Second-generation computers (1956–1971)
- Third-generation computers (1964–1971)
- Fourth-generation computers (1972–present)
- Fifth-generation computers (present and beyond)

She emphasizes that each subsequent generation is characterized by significant improvements in the technology used to build them.

'Let us learn about these generations of computers one by one,' she tells the class.

First-generation Computers (1940–1956)

First-generation computers used vacuum tubes for circuit and magnetic drums for memory. A vacuum tube is a device that consists of a sealed glass enclosure. Vacuum tubes were used in a wide range of applications, including amplification of signals. However, they generated a lot of heat and were expensive.

First-generation computers were huge. An entire room was needed to keep a first-generation computer. They were also very expensive. The instructions to computers were given using machine language. So not everyone was able to use them. Those computers could solve only one problem at a time. They used punched cards for input and printouts for output.

UNIVAC, ENIAC, Mark I, EDSAC, and EDVAC are a few examples of first-generation computers.

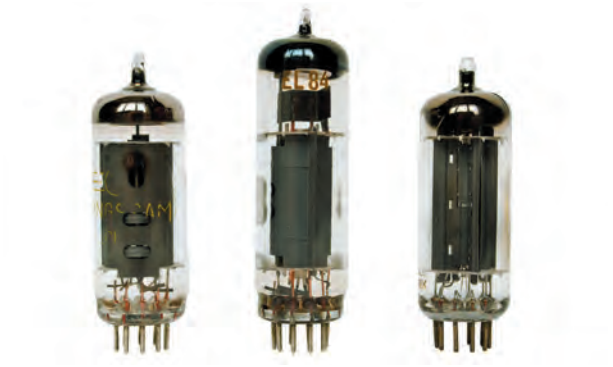


Fig. 1.5 Vacuum tubes

Disadvantages of first-generation computers

The class then lists the following disadvantages of first-generation computers.

- They were very big in size and required a large space for installation.
- They generated a large amount of heat, and so air conditioning was required.
- They were not very reliable.
- They were programmed to use only machine language. Only people who knew machine language could operate them.
- They could solve only one problem at a time.
- They were very expensive and non-portable.

Quick Learn

Which circuitry device was used in first-generation computers? Collect pictures of the device.
Create a Word document and do the following:

- Insert the picture that you have got.
- List out the features of the device.
- Find out the importance of its features.

Second-generation Computers (1956–1963)

Second-generation computers used transistors in place of vacuum tubes. A transistor is a semiconductor device. It is smaller, faster, more energy-efficient, and less expensive than a vacuum tube. The use of semiconductors led to a new generation of smaller, faster, and more powerful computers. The instructions to computers were given using assembly language. However, they still used punched cards for input and printouts for output.

IBM 7094 series, IBM 1400 series, Honeywell 400, and CDC 164 are a few examples of second-generation computers.

Fig. 1.6 Transistor

Third-generation Computers (1964–1971)

Third-generation computers were built using **Integrated Circuits (ICs)**. An IC consists of an entire circuit on a single chip. A tiny IC chip may contain hundreds or thousands of miniaturized transistors. A third-generation computer consisted of several chips interconnected on printed-circuit boards. This innovation reduced the size of computers drastically.

With the use of ICs, the computers became faster, efficient, and more reliable. This generation used an operating system for the first time. Third-generation computers used keyboards to give input and monitors to produce output. They became affordable and could be used at home. A special language was developed to give instructions to the computers.

IBM 360, CDC, and PDP are a few examples of third-generation computers.

Fig. 1.7 Integrated circuit

Fig. 1.8 Third-generation computer

Fourth-generation Computers (1972–present)

Fourth-generation computers were developed using microprocessors. A microprocessor may contain thousands of integrated circuits (ICs) built on a single chip. The microprocessor used in a computer, known as the central processing unit (CPU), is the brain of the computer. It grouped together all the components responsible for the arithmetic, logic, and control functions on a single chip. This made computers smaller and portable, which led to the development of personal computers.

Remember

A microprocessor contains thousands of integrated circuits on a single chip.

Did You Know?

The first microprocessor was Intel 4004. It was developed by Intel Corporation in 1971. However, it was not very powerful.

Fig. 1.9 Microprocessor

In 1981, IBM introduced its first personal computer. In 1984, Apple introduced Macintosh. Fourth-generation computers had the capability to be grouped together to form networks. The mouse and GUI (graphical user interface) were other advancements during this period. These computers used devices such as mouse, keyboard, and scanner as input devices. Monitors and printers were used as output devices.

Apple II, CRAY, and IBM PC are a few examples of fourth-generation computers.

Fig. 1.10 Examples of fourth-generation computers

Fifth-generation Computers (Present and Beyond)

Fifth-generation computers, which are still being developed, are based on **artificial intelligence (AI)**. The aim is to develop computers that display intelligent human behaviour. These are being developed as the most advanced types of computers with extraordinary capabilities, such as voice recognition, face recognition, playing games, natural language processing, and taking decisions in real-life situations. Robots are fine examples of fifth-generation computers.

Fig. 1.11 Fifth-generation computer

Ms Gupta tells the class that Mark Zuckerberg has developed a personal virtual assistant, Jarvis, an AI system that runs his home. It can do things such as turning lights on and off, playing music of personal choice, opening the front door for his friends, and making toast.

Samarth has now understood all the generations of computers. He creates the following table in MS Word that summarizes the evolution of computers.

Did You Know?

Mark Zuckerberg is known as the founder of the social networking site Facebook.

Generation	Years	Technology	Examples
First	1940–1956	Vacuum tubes	UNIVAC, ENIAC, EDSAC, EDVAC, and Mark I
Second	1956–1963	Transistors	IBM 7094 series, IBM 1400 series, Honeywell 400, and CDC 164
Third	1964–1971	Integrated circuits	IBM 360, CDC, and PDP
Fourth	1972–Present	Microprocessors	Apple II, CRAY, and IBM PC
Fifth	Present and Beyond	Artificial intelligence	

The computer class is over now. 'We will discuss some latest trends in technology tomorrow,' says Ms Gupta.

Checkpoint

Match the following.

1. Microprocessor	a) Fourth-generation computers
2. Artificial intelligence	b) Second-generation computers
3. Vacuum tube	c) Third-generation computers
4. Transistor	d) Fifth-generation computers
5. Integrated circuit	e) First-generation computers

Latest Trends in Computer Technology

Samarth is mesmerized by how computers came into being—from abacus to modern-day computers.

'What next?' he wonders.

He wants to know what all new developments are being carried out in computer technology. Today he is going to learn about some recent trends in computer technology.

Smartphones

A smartphone is a mobile phone that can also function as a handheld computer. It can perform a variety of functions besides making calls. It can be used to carry out calculations, browse the web, shop online, organize video conferences, take photos and record videos, navigate while driving, control electronic devices remotely, and create a Wi-Fi hotspot. There are a wide variety of mobile apps for specific needs—for example, the apps that enable us to connect with family and friends, make payments, listen to music, watch films and live TV, play games, and study.

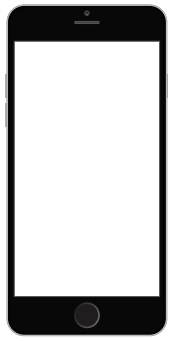


Fig. 1.12 Smartphone

Wearable Technology

Ms Gupta tells the class that wearable technology or wearables are smart electronic gadgets that can be worn on the body as accessories. Smart watches, fitness trackers, smart glasses, and VR headsets are some of the most popular wearables.

She lists out some of the latest wearables along with their descriptions and examples.

Wearables	Description	Examples
Smartwatches	These are the touch-screen devices worn like wristwatches. These may include many functions of a smartphone.	Apple Watch Series 2, Fitbit Ionic
Fitness trackers	These are usually worn on the wrist or clipped to a belt. Such devices can monitor and track fitness-related data, such as distance walked or run, calories consumed, heart rate, and quality of sleep.	Fitbit Alta HR, Garmin Vivosmart 3, Garmin Vivomove HR, Nokia Steel HR, and Misfit Ray
Smart glasses	Smart glasses may include the functionality of a smartphone. Some features include a built-in camera, Bluetooth, Wi-Fi, voice recognition, virtual reality, and augmented reality.	Google glasses, Vuzix Blade AR, Solos, and Epson Moverio BT-300
VR headsets	A VR headset is a gadget worn over the eyes like a pair of goggles. The user sees an image on high-definition screens in front of the eyes. With head tracking, the picture on the screen changes when the user looks in a different direction. This gives the user the feeling of being part of the virtual space.	Google Cardboard, HTC Vive, Samsung Gear VR, and Sony PlayStation VR

Fitness tracker Smartwatch VR headset Smart glasses

Fig. 1.13 Examples of wearables

3D Printers

'You can take out a 3D printout.' Ms Gupta tells the class.

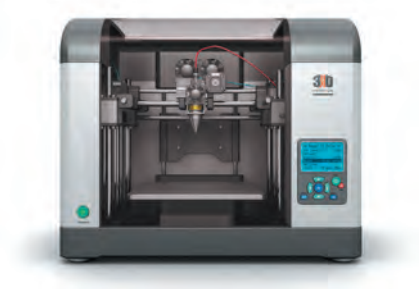


Fig. 1.14 3D Printer

Children are curious to know how this is possible. Ms Gupta tells the class that three-dimensional printers are used to print 3D objects. These printers use the 3D-printing technology to join material and create 3D objects. Various laser-printing techniques are used to get the desired output. These 3D models are created using a computer-aided design (CAD) package on a computer.

Robots

Ms Gupta tells the class that a robot uses artificial intelligence (AI) technology. It is a machine programmed by a computer that can carry out complex tasks on its own without any human intervention. Sophia is a social humanoid robot developed by a Hong Kong-based company, Hanson Robotics.

Fig. 1.15 Robot

Virtual Reality

Virtual reality (VR) is a technology in which a scenario is generated by a computer that simulates a real-life experience. Users feel as if they are actually watching that in real life. VR headsets are the devices to be worn to experience virtual reality. For example, a PlayStation VR simulates a real-life gaming scenario for gamers. A gamer playing with the VR headset on actually feels that he or she is the one who is in the game.

Augmented Reality

Augmented reality (AR) is a technology that integrates digital information with a user's view of the real world, thus providing us a combined view. With the AR technology, a user can manipulate with the real-life objects without having to touch them. For example, in the picture shown alongside, a woman is checking out how a sofa would look like in her room without actually placing it in her room. Car companies are also working on AR technology that will enable a map to be displayed on a car windshield to give directions.

Fig. 1.16 Example of AR

Checkpoint

Choose the correct options.

1. Under which category of devices does the Samsung Gear series fall?
   a) Smartphone
   b) Samsung glasses
   c) Wearable
   d) AR
2. Which of the following technologies is used by robots?
   a) 3D Printing
   b) AI
   c) Machine learning
   d) All of these
3. On which technology is JARVIS based?
   a) 3D Printing
   b) AI
   c) Machine learning
   d) Both b) and c)
4. Which of the following is developed by Apple?
   a) S9+
   b) iPhone X
   c) 3D glasses
   d) None of these
5. Which of the following devices is used as an activity tracker?
   a) 3D glasses
   b) Smartphone
   c) Laptop
   d) Wearable

Key Terms

Abacus	The first calculating device made of a wooden box consisting of movable beads
Punched card	A card perforated according to a code, formerly used to program computers
Magnetic drum	A storage device used in earlier computers
Virtual reality	A technology that simulates a real-life experience
Augmented reality	A technology that places over a computer-generated image on a user's view of the real world

Recap

- An abacus was the first of many calculating devices to be invented to perform both basic and complex calculations.
- First-generation computers used vacuum tubes in their circuit and solved only one problem at a time.
- Second-generation computers used transistors in their circuit and processed instructions faster than first-generation computers.
- Third-generation computers made use of semiconductor chips and introduced monitors and keyboards as sources of output and input respectively.
- Fourth-generation computers placed everything on one single chip, called an integrated circuit.
- Fifth-generation computers are still in the development phase and make use of AI abilities, such as voice recognition and natural language processing.
- Smartphones are small computers that can do almost everything.
- Wearables are used for activity monitoring, such as for measuring heart rate, and are worn on the body.
- Virtual reality (VR) and augmented reality (AR) are the technologies that simulate real-life experiences for users.

Exercise

A. Choose the correct options.

1. In which year was the Pascaline invented?
   a) 1736 b) 1642 c) 1638 d) 1700
2. Under which generation of computers does ENIAC fall?
   a) First b) Second c) Third d) Fourth
3. Which of the following devices displays information like a smartphone without using hands.
   a) Robot b) Wearable
   c) Google glasses d) None of these
4. Which generation of computers relied on an assembly language?
   a) First b) Second c) Third d) Fourth
5. Which of the following features was introduced by fourth-generation computers?
   a) Semiconductor b) 3D printing
   c) Keyboard input d) GUI

B. Write T for *true* or F for *false*.

1. The analytical engine was invented by Charles Babbage. ☐
2. First-generation computers used transistors. ☐
3. UNIVAC is a type of third-generation computer. ☐
4. Virtual reality is a technology that superimposes a computer-generated image on a user's view of the real world. ☐
5. A robot is an example of fourth-generation computers. ☐
6. First-generation computers used transistors as their chief component. ☐

C. Fill in the blanks.

1. _____ was used for storage purposes in first-generation computers.
2. The _____ was designed by Charles Babbage.

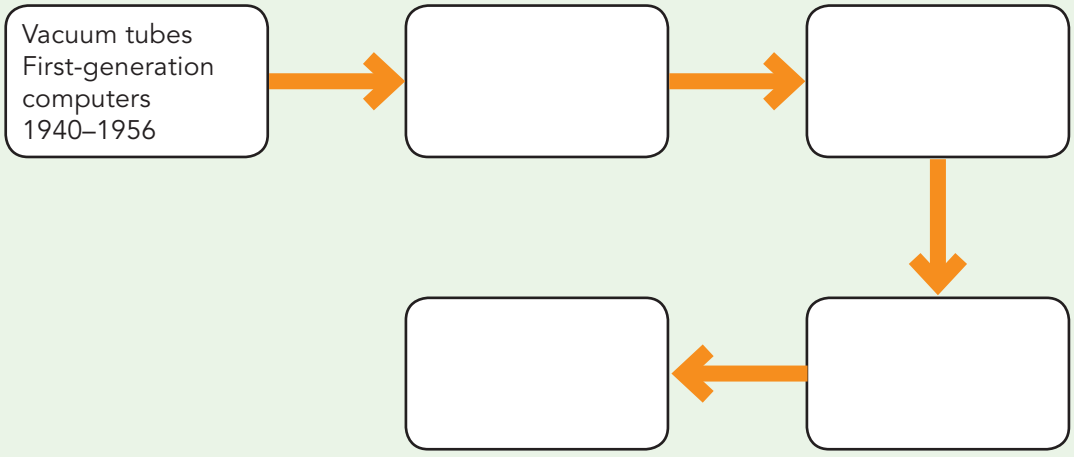
3. Second-generation computers used _____ as the chief component.
4. _____ is considered the first general-purpose computer.
5. A _____ is an example of artificial intelligence.
6. The period of third-generation computers was from _____ to _____.

D. Answer the following questions.

1. Describe some of the early computing devices.
2. Compare first- and second-generation computers.
3. What were the input and output sources in third-generation computers?
4. What is the difference between virtual reality and augmented reality?
5. Briefly explain any three latest technologies in computers.
6. What were the disadvantages of first-generation computers?

Application-based Questions

1. Raman wants to create a timeline to show the technology changes that took place in the development of computers. Help him in completing the timeline.



2. Neha's computer teacher wrote some characteristics on the board. Read the characteristics and identify the device or the technology.

   a) It was the first calculating device.

   b) It is a technology that integrates digital information with the real world.

   c) Laptops and tablets fall under this generation of computers.

Lab Activity

1. Create a table in MS Word. Write the period of each generation of computers with examples.
2. Create a presentation and write two major features of each of the following computers:

   a) IBM 360 b) Smartphones c) ENIAC d) Pascaline

Project

1. Collect pictures of different generations of computers, and paste them on a sheet of chart. Also, write the main features of each generation.
2. Make a PowerPoint presentation on 'Jarvis by Mark Zuckerberg'. Use as many features of PowerPoint as you can.

Explore More

- Do some research on the early computing devices other than those mentioned in the chapter. Try and collect pictures of all those devices.
- Find out the names of machine level languages used in the second generation of computers.

Weblinks

- http://btob.co.nz/business-news/five-generations-computers/
- https://www.webopedia.com/DidYouKnow/Hardware_Software/FiveGenerations.asp

Notes for the Teacher

- Show pictures of early computing devices. Discuss how are they different from the currently available devices.
- Explain the differences among different generations of computers.
- Use images to show the hardware components associated with each computer generation.
- Discuss the latest trends going on in technology.

CHAPTER

2

Personalizing Windows 10 Environment

After going through this chapter, you will be able to—

- **customise** desktop;
- **pin** tiles, **resize** and **move** them, and turn them off;
- **display** multiple windows at a time;
- **know** about the universal apps; and
- **explore** pictures.

John has been promoted to class 5. In previous classes, he has learnt about Windows 10 operating system. Today the whole class is very excited as the computer teacher, Ms Rita Srivastava, is going to teach them more about Windows 10.

As Ms Srivastava enters the class and asks the class what they are going to study today, the whole class loudly says 'Windows 10'.

'But I think you already studied about Windows 10 in your previous class,' she says.

'Yes, Ma'am,' one of the students replies.

'Today we are going to learn how to personalize Windows 10,' says Ms Srivastava.

'Can you tell me the meaning of personalize?' she asks.

'No,' John replies.

'OK, before moving on, we must know the meaning of the word "personalize",' she says.

Then Ms Srivastava explains the word 'personalize':

'The word "personalize" means to modify something to suit our needs so as to change its appearance and functionality.'

'John, can you revise a few lines about Windows 10?' she asks.

This is what John explains:

Microsoft Windows is a popular operating system available for platforms like desktops and tablets. It is developed and released by Microsoft. Famous versions of MS Windows include Windows XP, Windows 7, and Windows 10. Windows 10 is the latest version of MS Windows. It has the following new features:

1. Windows Hello, a biometric-based security system
2. Microsoft Edge, a new default browser
3. Cortana, an intelligent personal virtual assistant
4. Paint 3D, a new application for drawing

'OK, that's right. Now we will first learn about the various features of Windows 10 in detail. You already know about that, so we are not going to spend much time on it,' Ms Srivastava says.

Features of Windows 10

Ms Srivastava tells the class that Windows 10 is popular because of its newly improved user-friendly features. She then tells the class about these features.

1. Windows 10 has a new Taskbar, which is divided into left and right portions. The left portion has the Start button, Search box, and Task View, while the Notification Area and Peek button are present on the right portion of the taskbar. It allows you to see the files that you are working on and also those applications that you have pinned for accessibility.
2. Windows 10 has an intelligent personal virtual assistant, Cortana, which is capable of searching anything on the PC and web. It takes voice commands as well as written commands.
3. Windows 10 has a new default browser, Microsoft Edge. It is integrated with Cortana and annotation tools.
4. It has a biometric-based security system, known as Windows Hello, which allows fingerprint access, iris scan, and facial recognition.
5. It has a new application for drawing, known as Paint 3D, in which you can perform various tasks, such as adding animations, converting 2D images to 3D, and drawing 3D images freehand.

Using Desktop

'Do you know all the tools to personalize the Windows are available on desktop as well?' Ms Srivastava asks the class.

'How can we do that?' John asks.

Ms Srivastava shows the Windows desktop to the class.

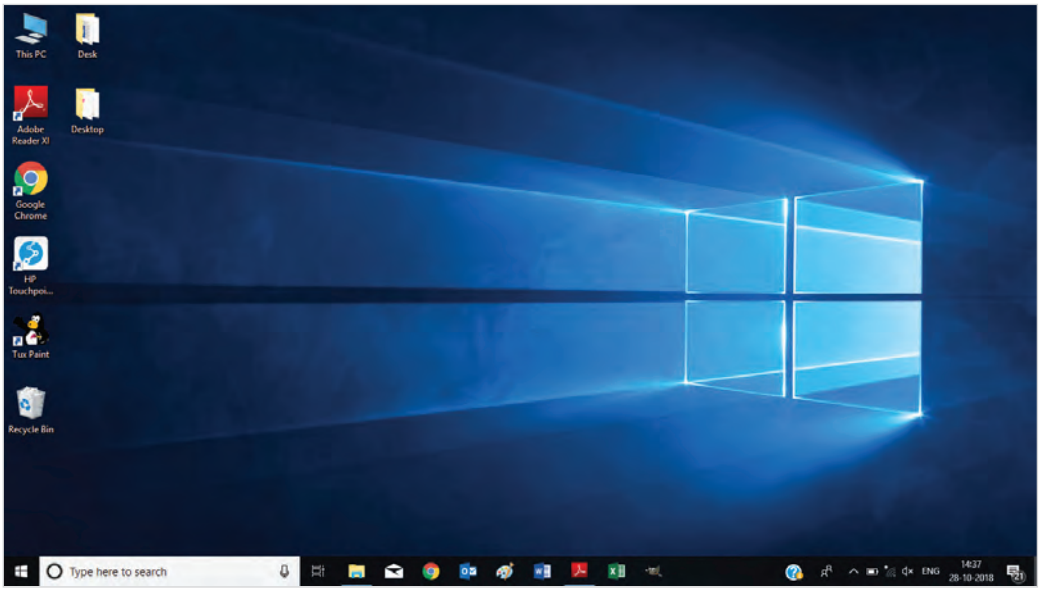


Fig. 2.1 Windows 10 Desktop

Ms Srivastava now calls Akriti and instructs her how to personalize Windows using Desktop.

1. Right-click anywhere on the empty space on the desktop.
2. Select the **Personalize** option from the context menu.
3. The **Settings** window appears with different options, such as **Background**, **Colors**, **Themes**, and **Font**.

Ms Srivastava now explains to the class the Background, Colors, and Themes.

Background

With this option, you can change the background of the Windows desktop. You can place a picture, put solid colours, or even use slideshow as a background.

Colors

Using this option, you can change the colour scheme of the Start Menu and other windows. The bar under the opened applications also changes the colour corresponding to this.

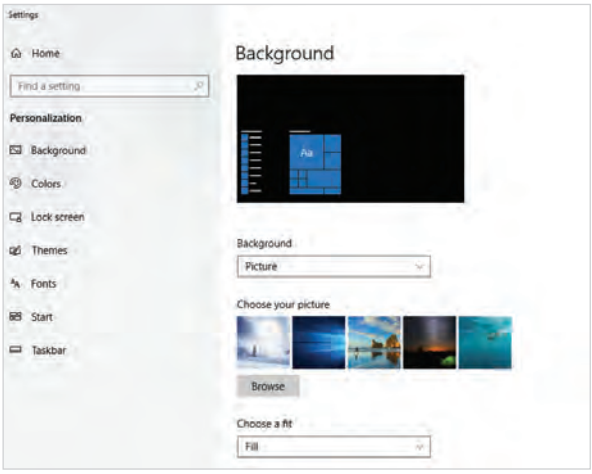


Fig. 2.2 Personalising Desktop background

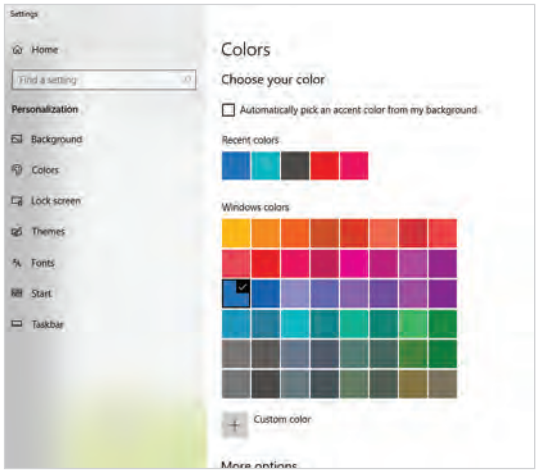


Fig. 2.3 Personalising Desktop colours

Themes

Themes provide us with a fast way to change the look and feel of Windows 10. A theme includes background images, colour accent, and sounds.

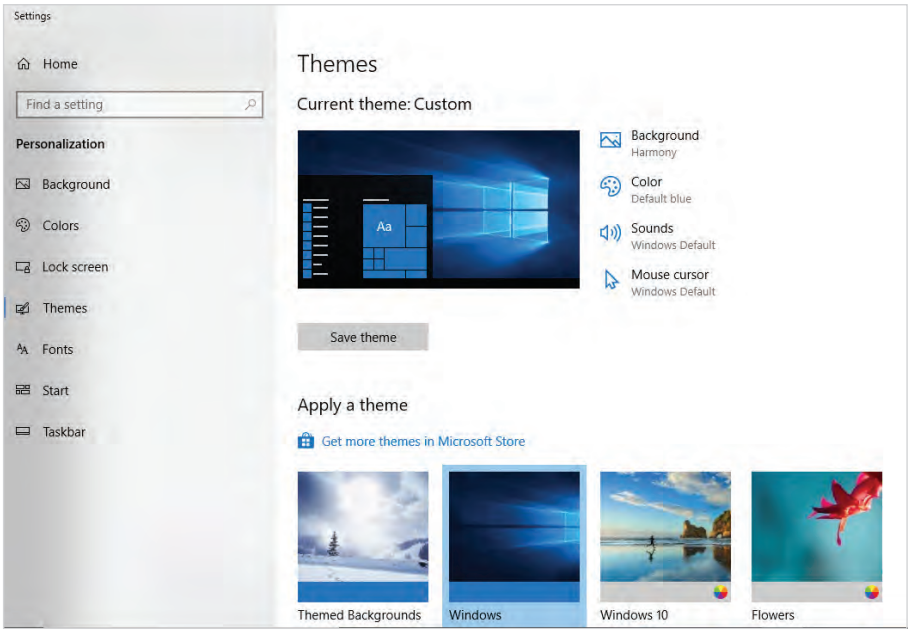


Fig. 2.4 Personalising Desktop themes

Icons

'I think everyone knows about the icons?' Ms Srivastava asks the class.

'Yes, Ma'am,' the class replies together.

'Icons are small pictures on the desktop that represent an object or a program. We can select an icon by clicking on it,' says John.

Then Ms Srivastava explains more about it.

'Icons are essential parts of graphical user interface (GUI). Here are the commonly used icons based on GUI,' says Ms Srivastava showing various icons to the class. She then explains these to the class.

Did You Know?

Cortana is Microsoft's intelligent digital assistant on Windows 10, which helps in controlling the operating system's search function. It also accesses your personal information along with Bing-powered cloud and is smart enough to perform helpful tasks.

1. **This PC** —It provides you with available drives and their different contents on exploring. To reveal the available contents, we just have to double-click on the drives.
2. **Recycle Bin** —It is just like a dustbin for holding deleted files and folders. Unless deleted from here, the deleted files/folders remain on the system. You can restore them as well.
3. **Network**—It consists of shared drives on different computers.
4. **Shortcut icon** —It provides a path to access a specific application that is not actually on the desktop. A small jump arrow helps in identifying that the application or program is a shortcut icon.
5. **Application icon** —It consists of graphical images for accessing a specific application or program.
6. **Document icon** —It is an active document window of an application.

'But what if we want to hide these icons?' she asks.

Then Ms Srivastava instructs John to follow these steps:

1. Right-click anywhere on the empty space on the desktop. A context menu opens.

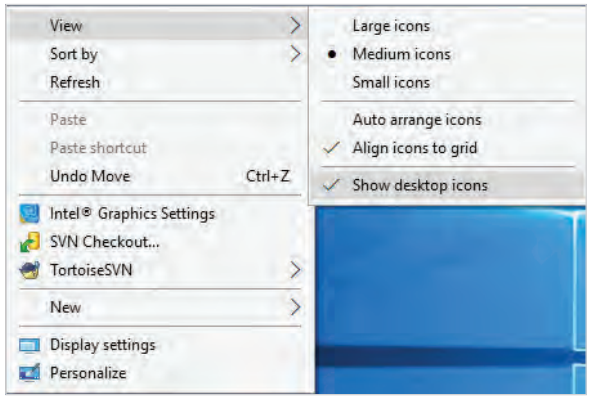


Fig. 2.5 Hiding Desktop icons

2. Point to the View option. A sub-menu appears.
3. Uncheck the **Show desktop icons** option.

Taskbar

'John, can you show us where the Taskbar is?' Ms Srivastava asks.

John shows the Taskbar. He had already studied about it in the previous class.

Ms Srivastava then quickly recaps the main aspects of the Taskbar.

The Taskbar is available at the bottom of the screen. It has the Start button on the extreme left. Next to it is the Search box with integrated microphone. This search box is Cortana-enabled. Next to it is the Task View button, which can be used to switch between multiple windows or to see how many tasks are actually opened. Then comes the middle portion, which shows opened and frequently used apps that are pinned. The opened application has a bar under its icon.

Quick Tip

Press Alt and Tab keys to switch between applications.

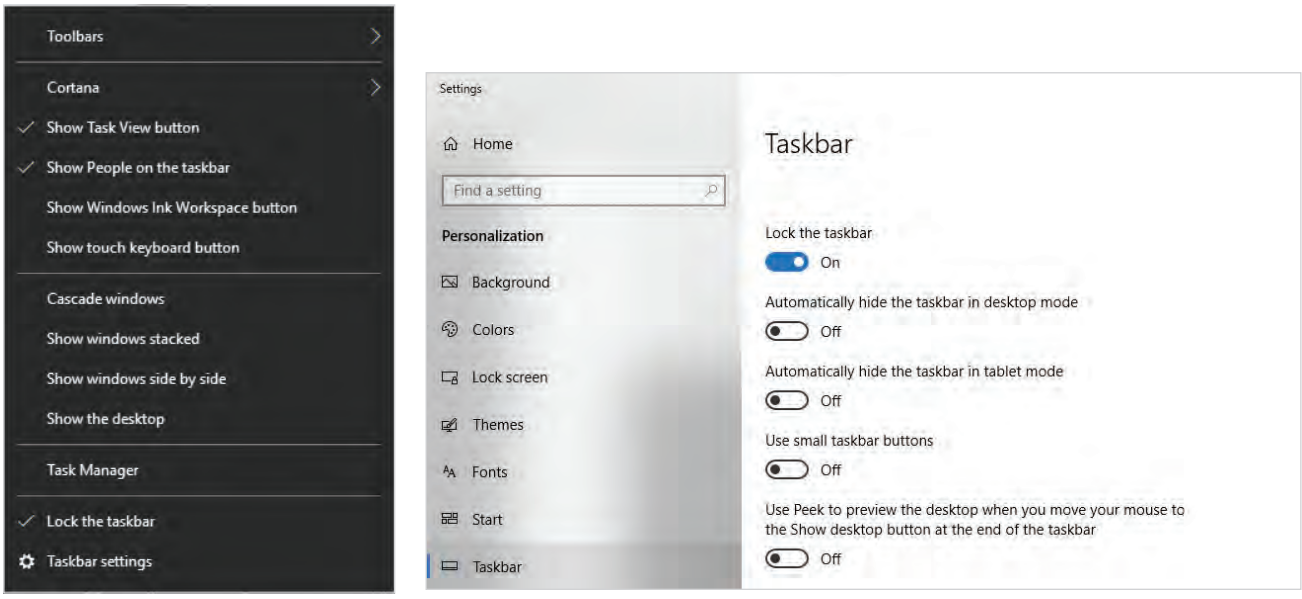
At last comes the Notification Area and the Peek button.

The Notification Area has icons and a clock showing date and time. The icons contain programs, such as network connectivity, volume, internet access, and speakers.

The Peek button is used to quickly go to the desktop and is located at the extreme right.

'You can even hide taskbar and pin and unpin programs to it,' says Ms Srivastava and shows the procedure to the class.

1. Right-click on the empty space of the taskbar. You will find various options there, such as **Lock the taskbar**, **Task Manager**, **Show the desktop**, and **Show Task View button**. You can select or deselect any of them.
2. Now there is a **Taskbar Settings** button. Clicking on it will enable you to personalize the taskbar.
3. There are different options, such as **Lock the taskbar**, **Automatically hide the taskbar in desktop mode**, **Automatically hide the taskbar in tablet mode**, **Use small taskbar buttons**, **Use Peek to preview the desktop**..., and **Replace Command Prompt with Windows PowerShell** ... .



a) b)

Fig. 2.6 Personalizing taskbar

'How can I move the Taskbar to the top of the Windows screen?' John asks.

'You can do that with the help of **Taskbar location on screen**,' replies Ms Srivastava.

Checkpoint

Answer the following questions.

1. What is the full form of GUI?
2. Name the default browser in Windows 10.
3. Name the biometric-based security system of Windows.
4. Name the different components of the Taskbar.
5. What is the 'This PC' icon used for?

Start Menu

Ms Srivastava now tells the class that the Start menu in Windows 10 is a mix of the Start menu of Windows 7 and the Start screen of Windows 8. Clicking on it reveals two panels—the left panel with all the applications and the right one with live tiles.

Fig. 2.7 Start Menu

Universal Apps of Windows 10

Ms Srivastava tells the class that the Universal Apps of Windows 10, also known as the Universal Windows Platform (UWP) apps, are those apps that you can use on all Microsoft Windows platforms, such as personal computers (PCs), smartphones, Microsoft HoloLens, tablets, and Xbox One.

'Ma'am, what is Microsoft HoloLens?' Srivatsan asks.

'This is Microsoft's pair of mixed reality smart glasses for watching virtual reality videos,' she replies.

Live Tiles

Ms Srivastava now clicks on the Start button and shows to the class the blocks of category—Create, Play, and Explore.

'These blocks are called Live Tiles. They are used for quickly glancing at an app without opening it. Some of them display date, weather forecast, and so on,' she says.

'Can we rearrange them?' asks John.

'Yes, you can. And not just this, you can even resize and move a tile to a different location, and even add new tiles,' Ms Srivastava replies and then shows to the class how to pin new tiles to Start.

1. She clicks on the **Start** button and right-clicks on an application, which she wants to pin.
2. A context menu appears. She clicks on **Pin to Start**.

The app gets added to the tiles.

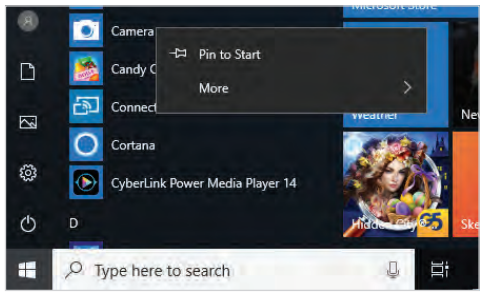


Fig. 2.8 Pinning new tiles

'Can we just drag the application to pin it to the tiles area?' Aslam asks.

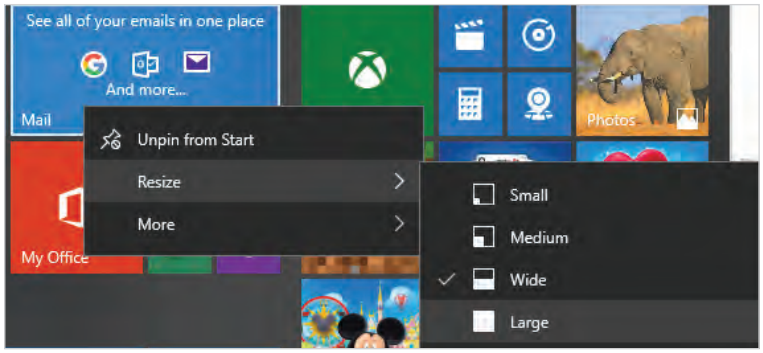
'Yes, you can do it easily,' Ms Srivastava replies.

Resizing Tiles

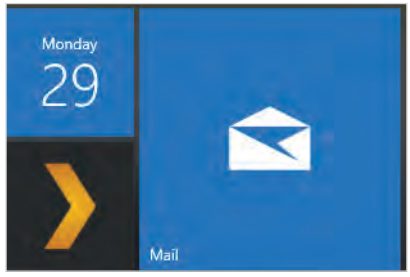
Now Ms Srivastava shows to the class how a tile can be resized.

1. She right-clicks on a tile. A dialogue box appears.
2. She asks John to locate the option **Resize** just below **Unpin from Start**.
3. John clicks on it. A context menu appears, which contains different sizes available to choose from—small, medium, wide, and large.

The tile gets modified.



a)



b)

Fig. 2.9 Resizing tiles

Turning Off Live Tiles

Ms Srivastava now wants to show to the class how to turn off the live tiles. She asks Mini to come forward and guides her through these steps.

1. Mini right-clicks on a live tile to turn it off. A dialogue box opens.

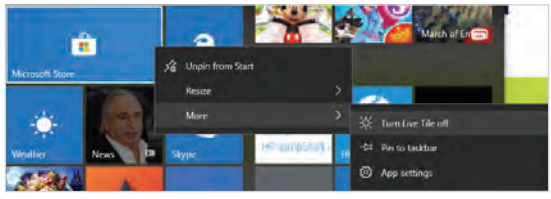


Fig. 2.10 Turning the live tiles off

2. Ms Srivastava asks her to click on More. An another dialogue box opens.
3. Mini clicks on **Turn Live Tile off**.

Checkpoint

Answer the following questions.

1. Name the various options available while resizing the tiles.
2. What are live tiles?
3. What is the full form of UWP?
4. Name the various platforms from where you can download universal apps of Windows.
5. How can you turn off live tiles?

Displaying Multiple Windows at Time

Ms Srivastava now explains to the class how to display multiple windows at a time.

1. She opens two different applications, This PC and MS Word.
2. She now right-clicks on the empty space of the Taskbar.
3. A menu appears. Ms Srivastava clicks on **Show windows side by side.**
4. The application windows gets displayed side by side.

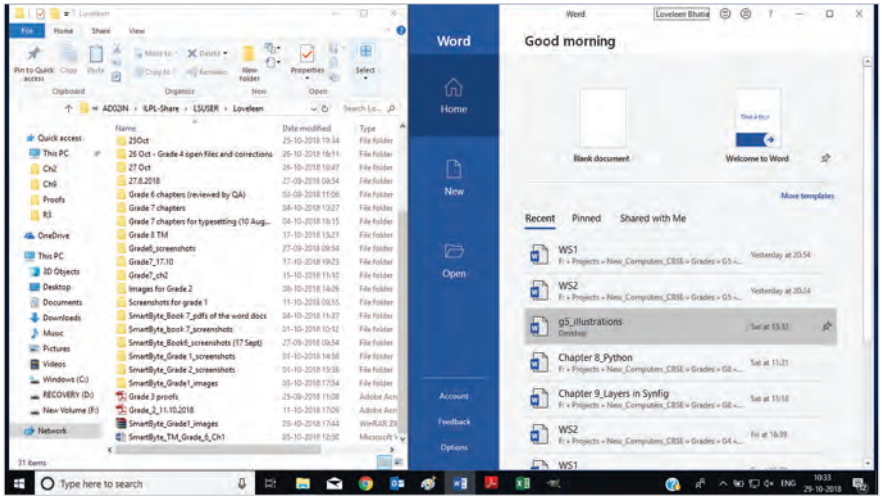


Fig. 2.11 Displaying multiple windows

Exploring Pictures

Lastly, Ms Srivastava tells the class that Windows 10 has introduced a new application, Photos for exploring pictures.

'Other than displaying pictures, it organizes our pictures and has editing tools for image enhancement and allows us to share pictures using platforms, such as social media and email,' she tells the class.

All the children of the class are happy. They have learnt some interesting features of Windows 10.

Did You Know?

Windows 10 Task View is a virtual desktop implementation and a new functionality for power users.

Windows 10 introduces overhauled Mail and Calendar apps. The Mail app adds swipe gesture controls.

Key Terms

Live tiles	The blocks of category Create, Play, and Explore that open on clicking on the Start button and display information by opening app at a glance
Taskbar	A bar located at the bottom of a desktop screen used to find files, apps, and shortcuts and also to customize the desktop screen
Desktop	The first screen that we see after a computer is switched on
Theme	A combination of desktop background pictures, colours, and sound on a computer
Icon	Small images of a program on a desktop

Recap

- Desktop has many shortcuts, such as Recycle Bin, Folder, and This PC, which help to start working on any program immediately.
- Files are kept inside a folder to make search easier.
- The Taskbar helps the user to find files and see notification and computer system features.
- Pinning is a method to log on to a computer without using a password or picture password.
- Tiles is a method to group files without opening them.

Exercise

A. Choose the correct options.

1. Which of the following icons provides a way to access an application not actually present on the desktop?

   a) Application b) Document c) Shortcut d) None of these

2. Which of the following security features work(s) with Windows Hello?

   a) Iris scan
   b) Fingerprint reader
   c) Face recognition
   d) All of these

3. How can you move the Taskbar to the left of the Windows desktop?

   a) By dragging it to the left side
   b) Using the Taskbar location on screen
   c) It can't be moved to different locations.
   d) None of these

4. What is the quickest way to go to the desktop if many applications are opened simultaneously?

   a) Using Windows + D keys
   b) Using Peek button
   c) Both a) and b)
   d) None of these

5. How can you access different drives present on different computers?

   a) Using Application icon
   b) Using Shortcut icon
   c) Using Network icon
   d) None of these

B. Fill in the blanks.

1. _____ is a pair of mixed reality smart glasses to watch virtual reality videos.
2. _____ plays a crucial role in GUI.
3. Showing News headlines on Start menu is an example of _____.
4. _____ apps are simultaneously available on different Microsoft Windows platforms.
5. Apart from pressing Windows + D keys, _____ can also be used to go to the desktop instantly.

C. Write T for *true* or F for *false*.

1. Live tiles are just bigger icons of applications used for better visibility. ☐
2. Paint 3D is a Cortana-enabled painting software. ☐
3. We can move the Taskbar to any desired location. ☐
4. Live tiles cannot be resized or moved to different locations. ☐
5. Task View can be used to switch between Windows. ☐

D. Answer the following questions.

1. During personalizing the desktop, what is the main difference between the pictures set up using Background and Themes?
2. What are universal apps of Windows?
3. Describe the procedure to set up the Taskbar to the right side of the desktop.
4. What is the main purpose of mixed reality smart glasses developed by Microsoft?
5. How are live tiles different from the icons?

Application-based Questions

1. Kiara wants to access weather forecast of the city that she is living in. What can you suggest her to get updated about the same?
2. Sameer wants to change the appearance of the Windows desktop of her computer. What can you suggest him to carry out the task?

Lab Activity

1. Make a new group named 'Documents' in Live Tiles. The group should contain MS Word, MS PowerPoint, MS Excel, and Acrobat Reader.
2. In the group created by you, resize the tiles to different sizes.

Project

Search the Microsoft Store and prepare a presentation on ten different UWP apps.

Explore More

Learn more about Windows 10 Mail app and Google Calendar.

Weblinks

- https://www.cnet.com/how-to/exploring-the-new-photos-app-in-windows-10/
- https://searchenterprisedesktop.techtarget.com/feature/How-to-customize-Windows-10-features

Notes for the Teacher

- Help students identify the differences between Windows 7, 8, and 10. Help them in understanding why Windows 10 is called a mixture of Windows 7 and 8.
- Give a live demonstration of the features, such as Windows Hello and Cortana, to the students.

CHAPTER

3 More on Tux Paint

After going through this chapter, you will be able to—

- **create** a storyboard and represent it in Tux Paint and
- **use** the Quit and Print tools in Tux Paint.

It is Sunday, and Ankita is visiting her cousin, Anuj, who is in class 7. He is working on something on his computer.

'Hey Anuj, how are you?' Ankita asks.

'I'm fine, Ankita,' Anuj replies.

'What are you working on?' she asks.

'I'm creating a storyboard on Tux Paint. Do you know about Tux Paint?' he says.

'Yes, I am familiar with Tux Paint, but I don't know how to create a storyboard,' she says.

Then Ankita tells him about Tux Paint.

Tux Paint is a paint application that makes painting and drawing more interesting and creative. It lets us enhance our creativity. It comes with well-defined library of Magic and Stamp tools, which help us create various projects. It not only develops our art of drawing but also helps us use graphics to narrate a story.

Did You Know?

Tux Paint is often considered an alternative to Kid Pix, which is closed source.

'So can you tell me why Tux Paint is so popular compared to other paint tools?' he asks.

'Yes, because of its features,' she says.

'And what are these features?' he asks.

Ankita lists various features of Tux Paint.

- A very simple and easy-to-use user interface.
- Tools are simple and not complicated.
- You can draw images on canvas and edit those using different tools.
- A slideshow feature for showing slides in the form of stories.

Tux Paint Window

Anuj tells Ankita that the Tux Paint window is divided into left and right portions and canvas.

He then shows her these tools on the left-hand side:

Paint—used for painting on the canvas

Stamp—used for inserting stamps in the canvas

Line—used for making lines of different thickness, size, shapes, and varieties

Shape—used for making different 2D figures with different colours

New—used for starting a new drawing canvas

Save—used for saving the page where you have created a drawing

Fig. 3.1 Tux Paint window

Open—used for opening a previously saved file

Magic—used for creating magical effects on the canvas

Anuj tells Ankita that the tools on the right are specific to the tools on the left.

Ankita also notices that at the bottom of the window, there are different colours.

Anuj asks her to click on Open.

'What do you see on the bottom left portion?' he asks Ankita.

'The Open and Slides buttons,' Ankita replies.

'Great! The slide button is used to start a slide show. To use it, we need to create a storyboard,' he tells Ankita.

Checkpoint

Answer the following questions.

1. Explore the Magic tool. What is its use? Give two examples where you will use it. Find out if you can insert pictures of planets, trees, and insects using this tool.
2. Which tool would you use to draw 2D shapes?

Creating a Storyboard

Anuj has told Ankita that to use the slide button, she needs to create a storyboard.

'What is storyboarding?' Ankita asks Anuj.

'Well, storyboarding is a way to tell the main plot of the story using a sequence of events on which different sets are arranged. There could be many scenes in a storyboard,' replies Anuj.

'Oh, that's great! Can we make one?' asks Ankita.

'Yes, we can. It is very easy and fun to learn. Can you suggest one great story to begin with?' asks Anuj.

'I would like to show the story of "**The Ant and the Grasshopper"**,' suggests Ankita.

'Yes, it appears to be quite interesting,' he says.

Ankita then follows Anuj's instructions to create a storyboard.

Scene 1

1. Anuj first asks Ankita to choose a suitable background for the story using the **New** tool. She chooses dark blue background layout.
2. Anuj tells Ankita that now the background has to be divided into two portions using the **Paint** tool. She does so. Anju tells her that the two parts may not be equal.

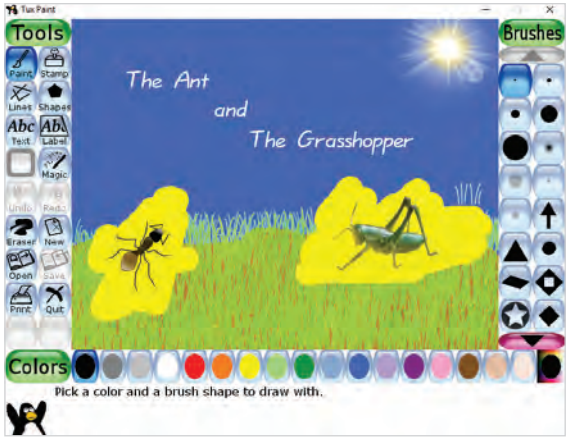


Fig. 3.2 Scene 1

3. He now uses the **Fill** effect and fills the bottom portion with brown colour. Ankita also draws grass using the **Grass** effect on the bottom portion.
4. Anju creates yellow boxes using the **Paint** tool to place the images of the ant and grasshopper.
5. He asks Ankita to place the images of the Sun, ant, and grasshopper using the Stamp tool.
6. Then she writes 'The Ant and the Grasshopper' at the top of the layout using the **Text** tool.

Scene 2

Now Ankita creates scene 2 on her own. She chooses white background layout and divides it into two parts. She fills the bottom portion with brown colour and the top part with light blue colour.

She draws grass and adds the images of the Sun, trees, shrubs, bushes, grasshopper, ant, and grain. She then adds the relevant text giving a short beginning of the story and the dialogues of the ant and grasshopper.

Scene 3

Similarly, Ankita creates scene 3 as shown here.

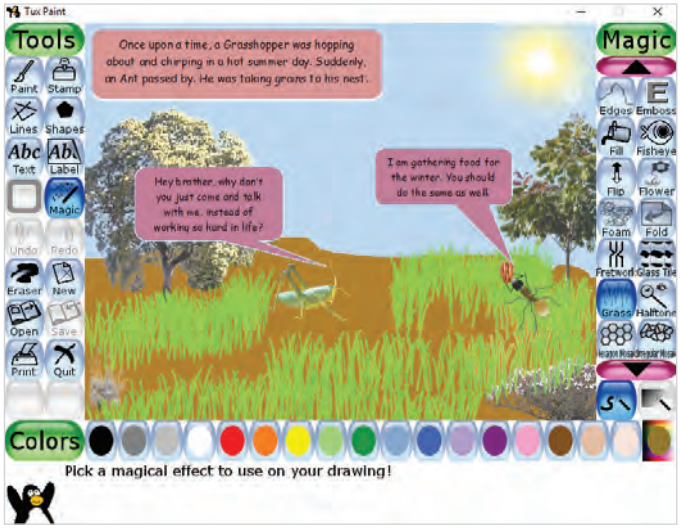

Tux Paint
Tools
Magic
Once upon a time, a Grasshopper was hopping about and chirping in a hot summer day. Suddenly, an Ant passed by. He was taking grains to his nest.
Hey brother, why don't you just come and talk with me, instead of working so hard in life?
I am gathering food for the winter. You should do the same as well.
Colors
Pick a magical effect to use on your drawing!

Fig. 3.3 Scene 2

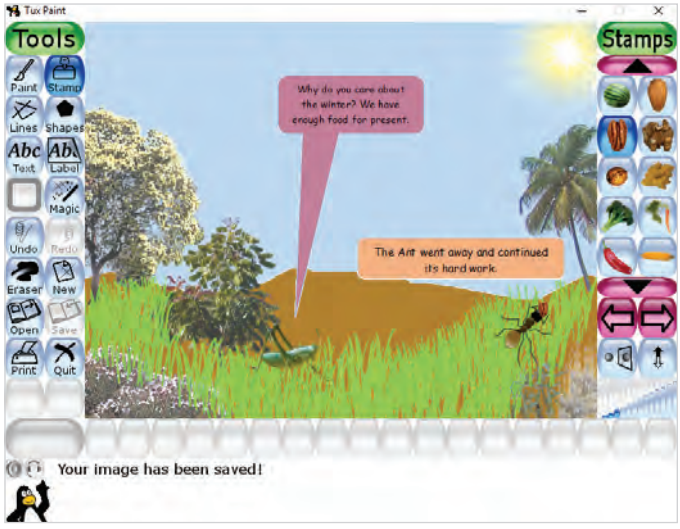

Tux Paint
Tools
Stamps
Why do you care about the winter? We have enough food for present.
The Ant went away and continued its hard work.
Your image has been saved!

Fig. 3.4 Scene 3

Scene 4

In scene 4, Ankita has to additionally create clouds, water, snow, grass, and den using different Magic effects. Anuj tells her that she can also use the Smudge effect to create clouds and snow.

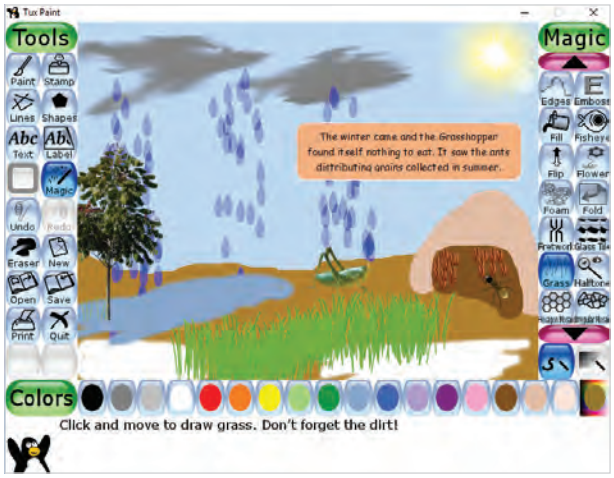

Tux Paint
Tools
Magic
Colors
The winter came and the Grasshopper found itself nothing to eat. It saw the ants distributing grains collected in summer.
Click and move to draw grass. Don't forget the dirt!

Fig. 3.5 Scene 5

Quick Learn

Make a drawing showing the scene of a stormy day with thunder, rain, and cyclone.

Slide Show

Anuj tells Ankita that in Tux Paint, we can also create the slide show of our drawing.

'A slide show is a sequential arrangement of series of events in the form of images to depict a story,' he explains.

'Oh… that's great. Can we make one to represent the storyboard we created just now?' she asks.

'Yes, of course. I think we should make one,' he says.

Then Anuj demonstrates to Ankita how to create a slide show.

1. He goes to the **Open** tool and clicks on it.
2. Ankita notices all the drawings created with **Open**, **Slides**, **Erase**, and **Back** buttons.
3. Anuj asks Ankita to click on the **Slides** button and then mark the pictures as 1, 2, 3, and so on.
4. After choosing the sequence, Ankita clicks on the **Play** button to play the slide show.
5. You can also slow down or speed up the slide show using the **Sliding scale** beside the **Play** button.

Fig. 3.6 Using Open tool

Fig. 3.7 Selecting slides for slide show

Using the Print Tool

'Can I print the storyboard on a piece of paper?' she asks.

'Yes, you can do that,' he says

Anuj then instructs her how to take a print out of the canvas.

1. Attach the printer to the computer.
2. Now search for the **Print** tool and click on it.

A message box on the screen appears. Simply click on '**Yes, print it!**' to print the page.

'That's so easy!' exclaims Ankita.

Fig. 3.8 Printing a drawing

Quitting Tux Paint

'I think that you already know how to exit Tux Paint,' he asks.

'Yes, I have already learnt about that in class 3,' she replies.

'OK, let's revise that,' he says.

Then Ankita describes how to quit Tux Paint.

1. She clicks on the **'Quit'** button. A dialogue box appears asking for whether you really want to quit or not.
2. She then selects '**Yes, I am done**'. Ankita knows that if the file has not been saved, the dialogue box will ask her to save it first.

Fig. 3.9 Quitting Tux Paint

Quick Tip

To close Tux Paint, simply click on × at the top right corner of the window.

Checkpoint

Answer the following questions.

1. Ankita wants to know how she can regulate the speed of the slide show of her drawings. How can she do that?
2. Which button will you use to remove a slide from a slideshow in Tux Paint.
3. In Tux Paint, which tool allows us to view all the slides in the presentation?
4. Write down the steps to print the storyboard that you have created in Tux paint.

Key Terms

Storyboarding	Creating a sequence of drawings or pictures that shows the main plot of a story
Slide show	An arrangement of a number of images in a particular order

Recap

- Tux Paint is a paint application that makes painting and drawing more interesting and creative.
- Magic tool is used to create magical effects on the painting.
- Paint tool is used to make a freehand drawing on a canvas where the brush thickness can be altered.
- Lines tool helps us draw straight lines and curves.
- Stamp tool has several images that can be inserted in the canvas.
- Shape tool is used to add closed figures to a canvas.
- Text and Label tools are used to give heading and text inside dialogue boxes.
- Deleting a drawing removes the drawing or painting from the save files.
- Storyboard means depicting different events in the form of a story.

Exercise

A. Choose the correct options.

1. Which of the following tools would you use to display the images created in Tux Paint in a sequence similar to a presentation?

   a) Paint tool b) Open tool c) Magic tool d) None of these

2. Amar wants to create a scene depicting a hot summer day. Which of the following effects would he use in his drawing?

   a) Lighten effect b) Darken effect c) Light effect d) Snow Ball

3. Ritika wants to increase the timing of the slide show in Tux Paint. Which of the following statements is true?

   a) She can do it by using the Sliding scale beside the Play button.

   b) She cannot speed up the slide show.

   c) She can do it by using the Magic effects.

   d) None of these is true.

4. Which of the following statements is/are true about the Eraser tool and the Erase button in the Open tool?

   a) The Eraser tool is used to erase a portion of a drawing.

   b) The Erase button is used to delete the entire drawing.

   c) The Erase button is used to erase a portion of a drawing.

   d) Both a) and b) are true.

B. Fill in the blanks.

1. The _____ tool can be used to draw different closed figures.
2. The _____ tool can be used to insert different image effects.
3. The _____ tool can be used to insert a heading of a story.
4. The _____ tool can be used to insert words in a dialogue box.
5. The _____ tool can be used to insert the picture of a ship or an airplane.

C. Write T for *true* or F for *false*.

1. A storyboard consists of slides that are displayed in a sequence. ☐
2. A slideshow depicts a story consisting of many slides. ☐
3. To create a tree, we can use the Magic tool. ☐
4. The Smudge effect can be used to create clouds. ☐

D. Answer the following questions.

1. Which features make Tux Paint different from other painting applications?
2. What do you understand by storyboarding? Why is it necessary for creating a slide show?
3. List any five Magic tools and write one sentence about them.
4. What is the difference between the Magic and Stamp tools?

Application-based Questions

1. Lewis wants to draw the picture of a leaf using the Magic tools, but he is not able to do it. Help him accomplish the task. Find out if there are any other means to do it.
2. Srivatsan wants to draw the scene of a dockyard. Which tools should he use? Write down the steps involved.

Lab Activity

1. Create a storyboard for finding the volume of a cube. Also create a slide show for the same.
2. Create a storyboard on the circulatory system of humans. Also create a slide show for the same.
3. Create a slide show on different types of transportations. Use the Text and Label tools to give a title to each slide or canvas.

Project

1. Read the following stories and make storyboards on them in Tux Paint:
   a) The Greedy Crocodile
   b) The Lion and the Mouse
2. Create a slide show on water cycle.
3. Create a slide show using the steps given below:
   a) The first slide should contain four numbers—145, 892, 567, and 799.
   b) Show the addition of the numbers in the second slide.
   c) In the third slide, show the result.
   Use the Stamp, Shape, and Magic tools to make your slide show attractive.

Explore More

Find out more about Tux Paint and other painting software programs, such as Photoshop, Illustrator, and CorelDraw.

Weblinks

- https://www.lifewire.com/what-is-graphics-software-1701504
- https://www.bloopanimation.com/types-of-animation/
- https://adobe-photoshop.en.softonic.com/

Notes for the Teacher

- Help students in downloading Tux Paint with all the relevant folders and create a shortcut on the desktop.
- Demonstrate to students how to make an attractive slide show by properly sequencing different events of a story.
- Discuss different types of Magic tools.

CHAPTER

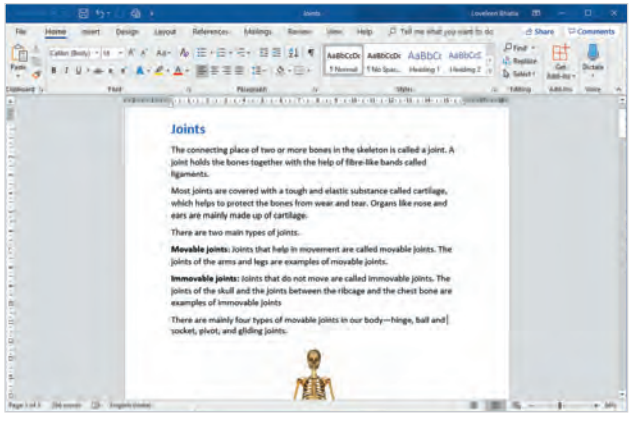
4 Working with Tables in Word

After going through this chapter, you will be able to—

- **demonstrate** the different methods to insert a table in Word;
- **modify** and **format** the table using various features; and
- **perform** calculations on the data in the table.

Naman needs to do his science project on 'Skeletal System' in Word. He starts typing about some of the major bones in the human body. He is also adding images to support the text.

He now wants to insert a table illustrating the types of joints, their locations, and movements. Tables are inserted to present data in an organized way. He asks his elder sister, Niharika, to help him.


Joints
The connecting place of two or more bones in the skeleton is called a joint. A joint holds the bones together with the help of fibre-like bands called ligaments.
Most joints are covered with a tough and elastic substance called cartilage, which helps to protect the bones from wear and tear. Organs like nose and ears are mainly made up of cartilage.
There are two main types of joints.
Movable joints: Joints that help in movement are called movable joints. The joints of the arms and legs are examples of movable joints.
Immovable joints: Joints that do not move are called immovable joints. The joints of the skull and the joints between the ribcage and the chest bone are examples of immovable joints
There are mainly four types of movable joints in our body—hinge, ball and socket, pivot, and gliding joints.

Niharika tells Naman that a table consists of rows and columns. A cell is formed where a row and a column intersect. A cell is the smallest unit where the data is entered. When the mouse is clicked inside a cell, the pointer blinks, showing that it is the current cell.

Creating a Table

Niharika further tells Naman that there are various ways to insert a table in Word. 'Let me explain you these ways one by one,' says Niharika.

Using Table Grid

1. Click on the **Insert** tab.
2. In the **Tables** group, click on the **Table** down arrow button.
3. A grid appears in the menu. Drag the mouse pointer over the grid to select the desired number of rows and columns.
4. The table will then be inserted in the document.

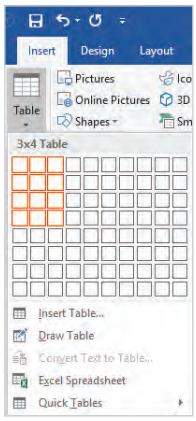


Fig. 4.1 Using table grid

Using the Insert Table Command

1. Click on the **Table** button and select the **Insert Table...** option.
2. The **Insert Table** dialogue box opens.
3. Specify the number of columns and rows.
4. Click on **OK** when you are done.

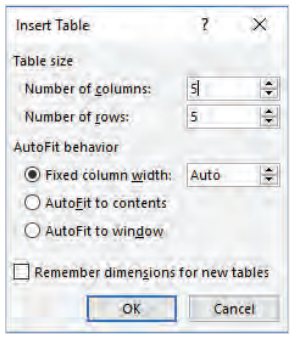


Fig. 4.2 Insert Table dialogue box

Using Draw Table Command

1. Click on the **Table** button and select the **Draw Table** option.
2. The mouse pointer changes to a pencil. Drag the pointer to draw a rectangle.
3. Draw horizontal and vertical lines to create rows and columns respectively.

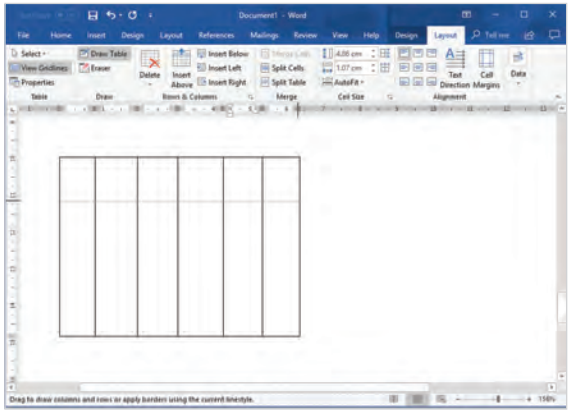


Fig. 4.3 Drawing a table using the Draw Table command

Did You Know?

You can select a row or column as you select a string of text in Word.

Converting Text to a Table

Niharika tells Naman that it is also possible to convert text into a table. She types some data in Word to make him understand. She then explains the following steps.

1. Select the text that you wish to format.
2. Click on the **Table** button and select the **Convert Text to Table...** option.
3. The **Convert Text to Table** dialogue box appears.
4. Click on **OK**. The text will be converted to a table.

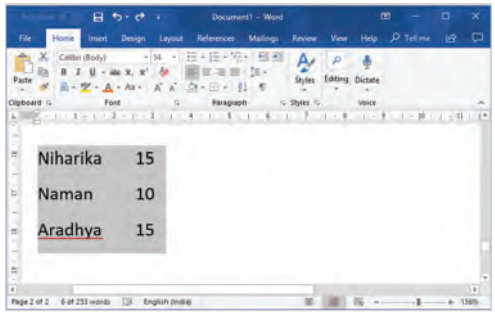


Fig. 4.4 Selecting the text

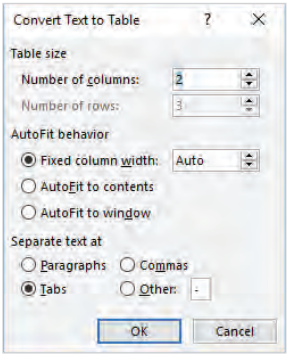


Fig. 4.5 Convert Text to Table dialogue box

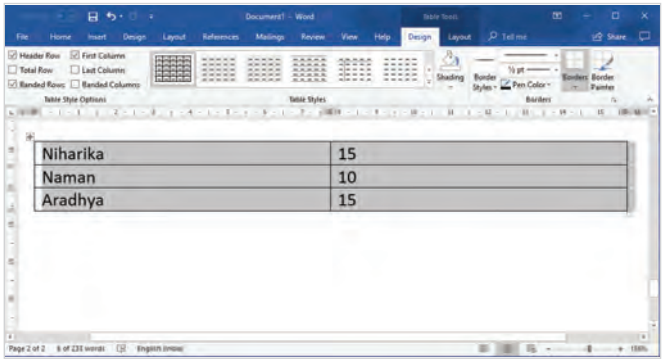


Fig. 4.6 Text converted to a table

Using Quick Tables

Niharika now tells Naman that the Quick Tables option lets him add some predefined table templates. She continues to explain the steps to him.

1. Click on the position where you want to insert the table.
2. Click on the **Table** button and hover over the **Quick Tables** option.
3. From the menu, select the desired template.
4. A table with the selected template will be inserted. You can replace the prefilled data in the template with the new data.

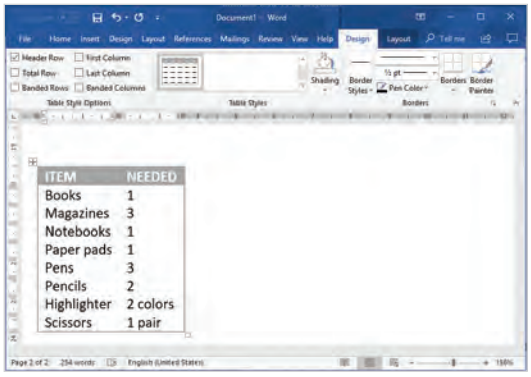


Fig. 4.7 Inserting a table using the Quick Table option

Entering Data in a Table

Naman has now inserted a table using the Table Grid option. He now wants to enter data in the table. Niharika tells Naman that to enter data in a cell, click on the cell. Type the text, and it will be displayed. Naman starts entering the text in the table. He also formats the text.

He notices that on inserting a table in Word, two new tabs—**Design** and **Layout**—appear under the **Table Tools** tab.

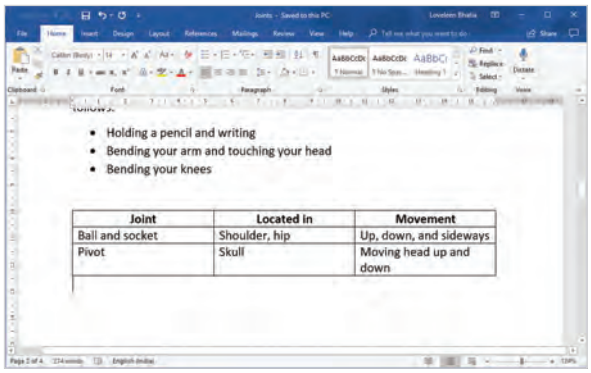


Fig. 4.8 Entering data in a table

Modifying a Table

Naman now wants to insert some more rows in the table. Niharika tells him that he can modify the table at any time and add, delete rows or columns, and merge or split cells. Naman then follows the steps as told by his sister.

Quick Tip

Remember the following keyboard shortcuts—

- To move through cells, use arrow keys.
- To move to the next cell, use the Tab key.
- To move backward to the cell, use Shift + Tab keys.

Inserting Rows and Columns

1. Click where you wish to insert a cell, row, or column.
2. Right-click and hover the mouse over the **Insert** option.
3. Select the appropriate option.

   or

   Click on the **Layout** contextual tab.
4. In the **Rows & Columns** group, click on the appropriate option—**Insert Above**, **Insert Below**, **Insert Left**, or **Insert Right**.

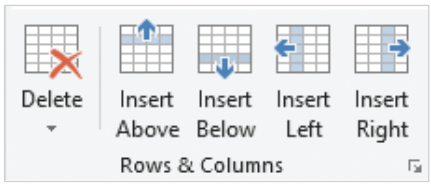


Fig. 4.9 Rows and columns group

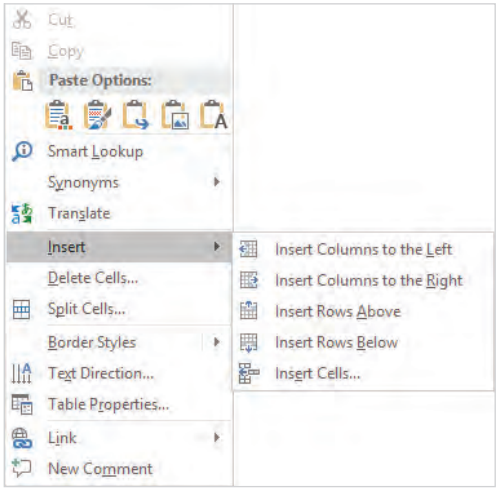


Fig. 4.10 Insert options

Deleting Rows and Columns

'How can I delete any cell, row, or column?' asks Naman.

'Let me show you the two ways for deleting a cell, row, or column', replies his sister.

She explains to him both the ways.

1. Select the rows or columns that you want to delete.
2. Right-click and select the **Delete Cells/Delete Column** option.
3. If you select the **Delete Cells** option, the **Delete Cells** dialogue box appears.
4. Choose the desired option and click on **OK**.

   or

   Select the rows or columns that you want to delete.
5. Click on the **Layout** tab.
6. Locate the **Rows & Columns** group, click on the **Delete** drop-down command, and select the desired option.

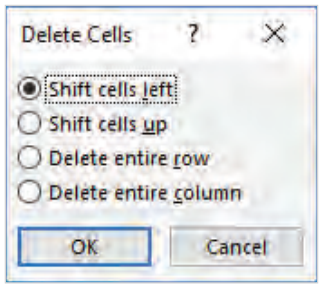


Fig. 4.11 Delete Cells dialogue box

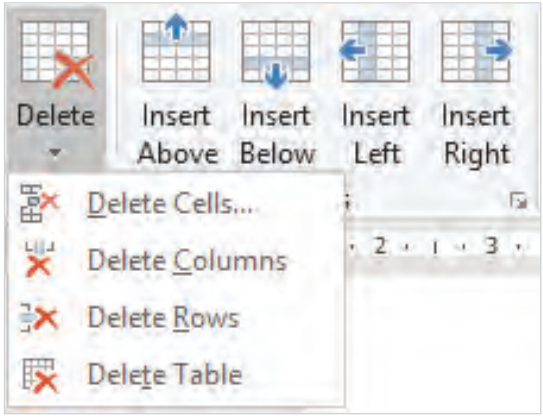
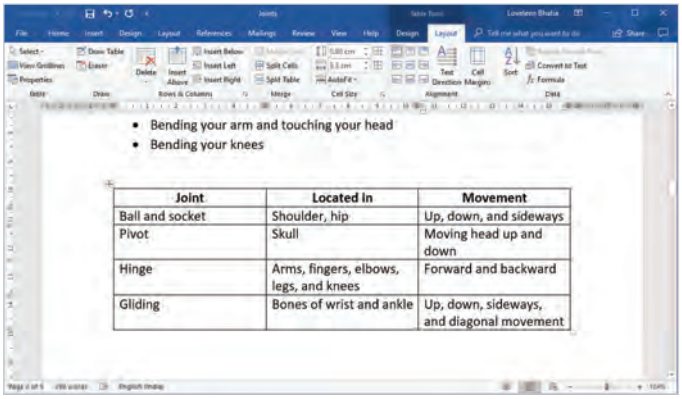


Fig. 4.12 Delete drop-down button

Quick Tip

To delete a row or column, select it and press Shift + Del keys to delete it.

Naman now adds two more rows and completes his table.



Joint	Located in	Movement
Ball and socket	Shoulder, hip	Up, down, and sideways
Pivot	Skull	Moving head up and down
Hinge	Arms, fingers, elbows, legs, and knees	Forward and backward
Gliding	Bones of wrist and ankle	Up, down, sideways, and diagonal movement

Fig. 4.13 Adding rows to a table

Splitting and Merging Cells

'You may sometimes find the need to divide a cell into two or more cells, or combine multiple cells into a single cell. Dividing a cell into more cells is called splitting cells and combining cells to form a single cell is called merging cells,' tells Niharika.

She continues to explain the steps of these features one by one.

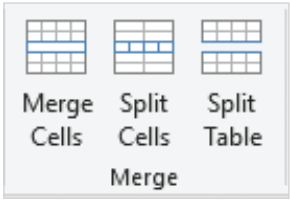


Fig. 4.14 Merge group

Splitting cells

Select the cell that you wish to split.

1. Click on the **Layout** tab under the **Table Tools** contextual tab.
2. In the **Merge** group, click the **Split Cells** command.
3. The **Split Cells** dialogue box appears.
4. Specify the number of columns and rows in the spin boxes.
5. When you are done, click on **OK**.

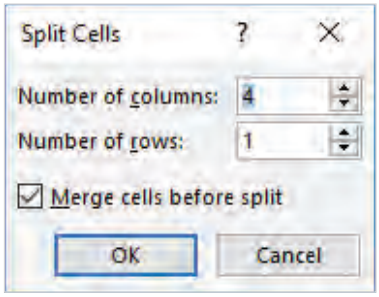
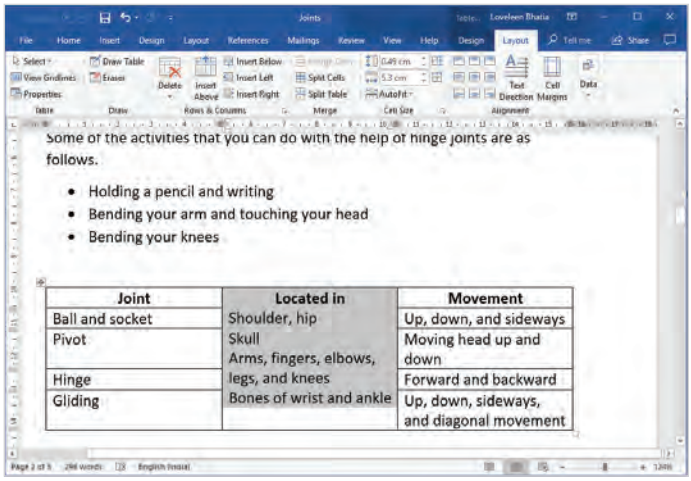


Fig. 4.15 Split Cells dialogue box

Merging Cells

1. Select the cell that you wish to merge and click on the **Layout** tab.
2. In the **Merge** group, click on the **Merge Cells** command.
3. The selected cells will be merged into a single cell.


Some of the activities that you can do with the help of hinge joints are as follows.

- Holding a pencil and writing
- Bending your arm and touching your head
- Bending your knees

Joint	Located in	Movement
Ball and socket	Shoulder, hip	Up, down, and sideways
Pivot	Skull	Moving head up and down
Hinge	Arms, fingers, elbows, legs, and knees	Forward and backward
Gliding	Bones of wrist and ankle	Up, down, sideways, and diagonal movement

Fig. 4.16 Merged cells

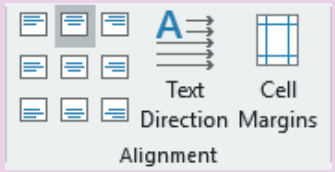
Formatting a Table

Naman now knows how to insert a table, add rows and columns to a table, and delete rows and columns from a table. His sister tells him that he can format the table in various ways—change the table style, add borders and shading, change row and column height, and resize a table to make it more presentable.

Naman enjoys using formatting features. He applies various formatting styles in his table.

Quick Tip

To change the alignment of the objects, click on the cell that you want to modify and then click on the Layout tab. Choose the desired alignment command in the Alignment group.



Changing the Table Style

After clicking in a cell in the table, Naman goes to the **Design** tab and hovers the mouse over the desired style in the **Table Styles** group.

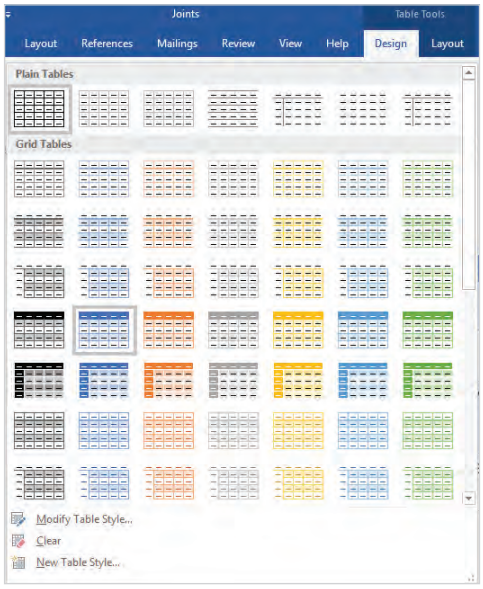


Fig. 4.17 Table Styles

Joint	Located in	Movement
Ball and socket	Shoulder, hip	Up, down, and sideways
Pivot	Skull	Moving head up and down
Hinge	Arms, fingers, elbows, legs, and knees	Forward and backward
Gliding	Bones of wrist and ankle	Up, down, sideways, and diagonal movement

Fig. 4.18 Applying a table style

Applying Borders and Shading

Naman's sister now explains to him that he can add borders and shading to a table. She shows to him the Borders command in the Borders group. Naman now follows these steps.

1. He clicks on the **Borders** button.
2. A list with many pre-defined border styles appears on the screen. Niharika tells

Naman that he can select any one of the styles from the list.

3. He clicks on the **Borders and Shading** command for more options.
4. The **Borders and Shading** dialogue box appears.
5. Under the **Borders** tab, he selects the **All** option.
6. He then selects the style of the line from the **Style** list, changes the colour to Blue, and sets the width to $1\frac{1}{2}$ pt.
7. The preview of the border is shown in the **Preview** section on the right.
8. After adding borders, he clicks on the **Shading** tab and selects a colour under the **Fill** section.
9. He then clicks on **OK** to apply the changes.

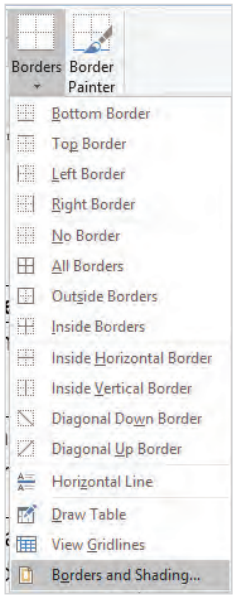


Fig. 4.19 Selecting Borders and Shading options

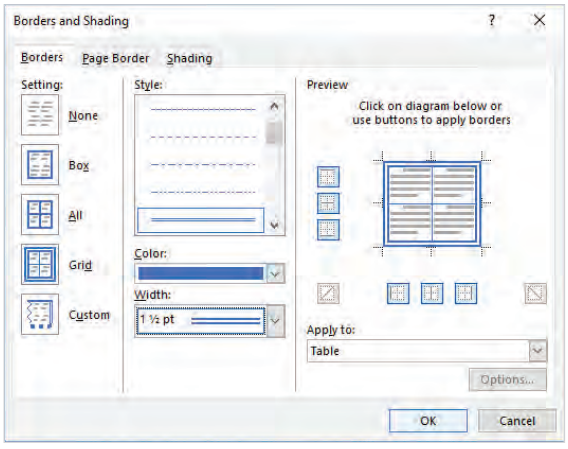


Fig. 4.20 Borders tab

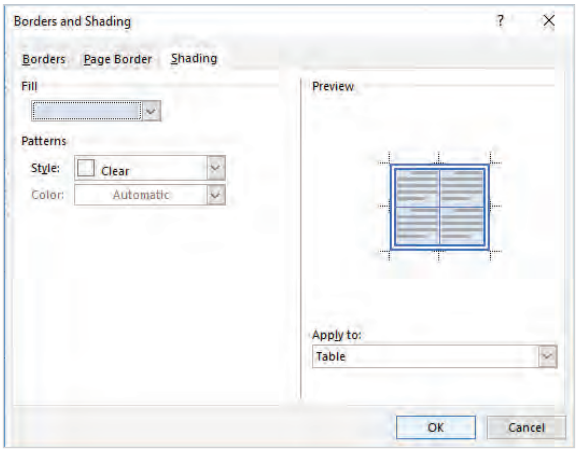


Fig. 4.21 Shading tab

Naman now shows the formatted table to his sister.

Joint	Located in	Movement
Ball and socket	Shoulder, hip	Up, down, and sideways
Pivot	Skull	Moving head up and down
Hinge	Arms, fingers, elbows, legs, and knees	Forward and backward
Gliding	Bones of wrist and ankle	Up, down, sideways, and diagonal movement

Fig. 4.22 Borders and Shading applied to a table

Inserting a Picture in a Table

'You can add pictures to a table as well,' Niharika tells Naman. Naman is curious to know about this.

'How can I do that?' Naman asks enthusiastically. He quickly adds a column to the right of the 'Joint' column to add images.

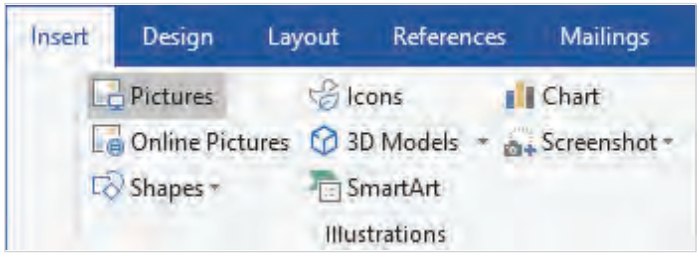


Fig. 4.23 Illustrations group

Niharika then describes him the following steps—

- Click on the cell where an image is to be inserted.
- Click on the **Insert** tab and then on the **Pictures** button in the **Illustrations** group.
- The **Insert Picture** dialogue box appears. Select the picture you want to add, and click on the **Insert** button.
- The selected picture will be inserted to the cell.

Naman adds all the images of the joints he has listed in the table.

Joint	Image	Located in	Movement
Ball and socket		Shoulder, hip	Up, down, and sideways
Pivot		Skull	Moving head up and down
Hinge		Arms, fingers, elbows, legs, and knees	Forward and backward
Gliding		Bones of wrist and ankle	Up, down, sideways, and diagonal movement

Fig. 4.24 Pictures added to a table

Quick Learn

List five most popular heritage sites in India in a table. Add their pictures to a column and write their descriptions in another column.

Changing Column Width and Row Height

After inserting images to the table, Naman observes that the images are not properly fitting in the cells.

Niharika tells him that he can modify the row height and column width. She then guides him as follows.

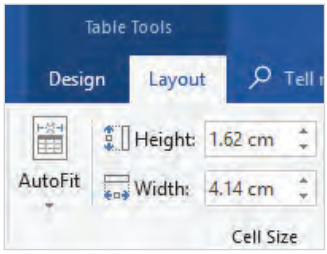


Fig. 4.25 Cell Size group

1. Select the row or column that you wish to modify.
2. Go to the **Layout** tab and locate the **Cell Size** group.
3. Set the row height in the **Height** box or column width in the **Width** box.

Calculations in a Table

Raman opens a new Word document and creates a new table showing the marks of his classmates in different subjects. He wants to find the total marks of each of his classmates.

Niharika tells him that the formula command lets us quickly do calculations in a table inserted in MS Word.

'You don't have to open a calculator if you need to perform any calculation on the data inserted in a table in Word,' she tells Naman.

Niharika then guides Naman through these steps.

1. Click on the cell where you want the result to appear.
2. Click on the **Layout** tab, and locate the **Formula** command.
3. The **Formula** dialogue box appears.
4. The **SUM** formula is already displayed. Click on **OK**.
5. The result will appear in the selected cell.

Quick Tip

Take the mouse pointer to the borders of a table. The pointer will change to a double-headed arrow. Drag it to the left or right to modify the column width and up or down to modify the row height.

Quick Learn

Enter your marks in any four subjects. Now add the marks and calculate the percentage using the appropriate formula.

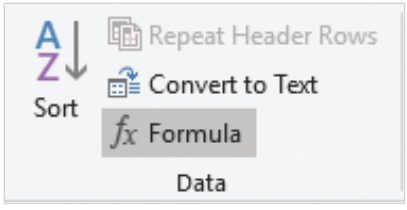


Fig. 4.26 Data group

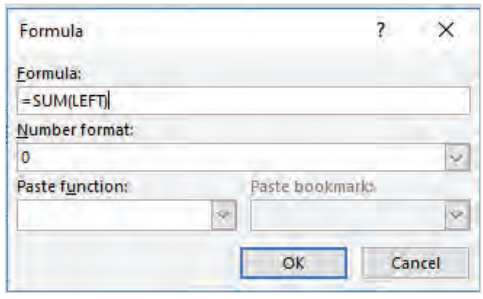


Fig. 4.27 Formula dialogue box

Niharika also tells Naman that other formulas are found in the Paste function.

Sorting the Data

Niharika tells Raman that he can sort data in either ascending or descending order using the **Sort** command in the **Data** group.

Raman opens his previous document of 'Skeletal System' and follows the steps told by his sister.

- After selecting the table, he locates the **Sort** command and clicks on it.
- The **Sort** dialogue box opens.
- Under **Sort by**, he selects the column 'Joint', which he wants to sort.
- By default, the sorting order is selected as **Ascending**. Naman keeps it as it is. However, Niharika tells him that he can select his preferred sorting order.

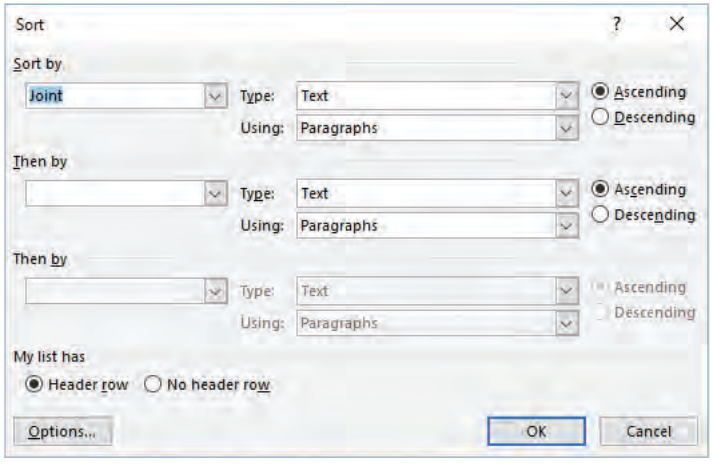


Fig. 4.28 Sort dialogue box

- Niharika tells him that if he wants to sort by multiple columns, he can select another column under the **Then by** field.
- Naman clicks on **OK**.

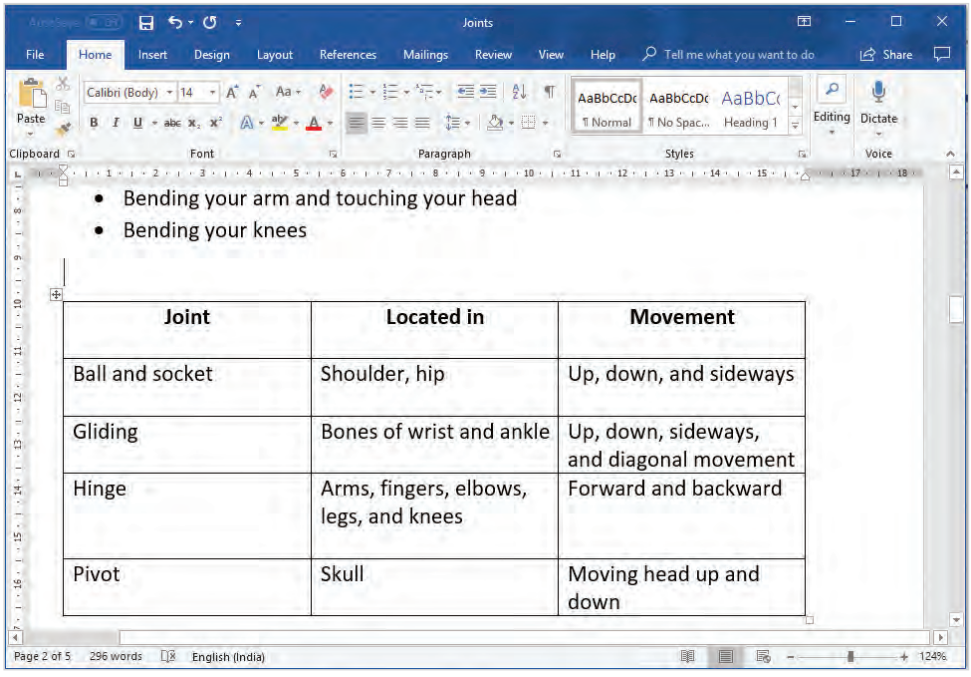


Fig. 4.29 Table after applying the Sort command

Key Terms

Table	An arrangement of information in rows and columns
Cell	A unit where a row and a column intersect
Row	A horizontal series of cells
Column	A vertical series of cells

Recap

- There are different ways to insert a table in Word—using the table grid, Insert Table option, Draw Table option, and Quick Table option. You can also convert text into a table.
- The Insert tab is used to insert a table to a Word document.
- To enter text to a table, click on the cell and start typing the text.
- The two new tabs—Design and Layout—appear under the Table Tools contextual tab when a table is inserted or selected.
- You can insert and delete rows and columns and merge and split cells.
- You can use the Design tab to change the table template and add borders and shading to a table.
- You can also insert a picture to a table using the Pictures option in the Illustrations group of the Insert tab.
- It is also possible to perform calculations on data in a table using the Formula command.
- You can also sort data using the Sort command in the Data group.

Exercise

A. Choose the correct options.

1. Which of the following tabs will you click on to insert a table?
   a) Insert b) Home c) Design d) Layout
2. Which of the following contextual tabs will you click on to insert rows and columns?
   a) Layout b) Format c) Insert d) Home
3. What is the intersection of a row and a column called?
   a) Cell b) Table c) Border d) Box
4. What is the keyboard combination to delete a selected row or column from a table?
   a) Alt + Delete b) Ctrl + Delete c) Delete d) Shift + Delete
5. Which of the following tabs allows us to insert a formula to a table?
   a) Review b) Layout c) Insert d) View

B. Write T for *true* or F for *false*.

1. You can insert a row above the selected row. ☐
2. To change the table design, click on the Design tab. ☐
3. It is not possible to split a cell. ☐
4. To insert a picture to a cell, click on the Home tab. ☐
5. The Quick Tables option provides some pre-defined table templates. ☐

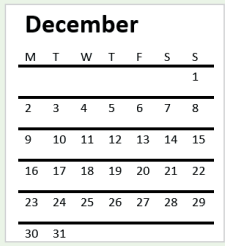
C. Fill in the blanks.

1. To insert a table grid, click on the _____ tab.
2. The _____ command is used to divide a cell into more cells.
3. To enter text into a table, click inside the _____.
4. A row can be inserted by right-clicking on a cell and selecting the _____ option.
5. The Design and Layout tabs appear under the _____ tab.

D. Answer the following questions.

1. Define the terms 'table' and 'cell'.
2. Write the steps to draw a table.
3. Mention the steps to convert text into a table.
4. How will you change the row height of cells in a table?
5. How will you add borders and shading to a table?

Application-based Questions



1. Naina has inserted a calendar to a Word document as shown alongside. Which feature of Word has she used? Write the steps that she has followed.
2. Deepika has created a table in MS Word. She has listed the names, class, and phone numbers of some of her friends. She wants to arrange the table in alphabetical order of names. How can she do that?

Lab Activity

Vehicle	Distance (km)	Time (hr)
Cycle	150	15
Car	350	7
Truck	1200	24
Bus	800	20
Train	2500	24
Scooter	90	3

1. The table given alongside shows the distance travelled and time taken by different vehicles. Create the similar table in Word and format it. Also, calculate the speeds by using the appropriate formula.
2. Insert a five-row and three-column table using the table grid and do the following—
   a) Type the headings for columns as Name, Class, and Favourite Sport.
   b) Fill each row with appropriate data.
   c) Add two more rows and populate them.
   d) Add borders to the table.
   e) Add a row above the column headings row and merge it into a single cell. Enter 'Class V Students details' as heading in this cell.

Project

1. The science teacher has given you a list of plants as follows—
   - Hibiscus
   - Money Plant
   - Watermelon
   - Rose plant
   - Palm
   - *Peepal*
   - Pine
   - Lemon plant

You need to classify these as shrubs, herbs, climbers, creepers, and trees. Make a table in Word with three columns as Plant, Image, and Category. Also, add the image of each plant type to the Image column.

2. Create a table in Word, and list any ten countries and their currencies. Find out the conversion rates of these currencies into Indian Rupees (INR) and list them in the third column. Format the table using as many features as you can.

Explore More

- Find out the commands under the Design contextual tab. Write the functions of those commands.
- Find out how sorting is useful in Word.

Weblinks

- https://www.pcworld.com/article/2459947/how-to-create-and-customize-tables-in-microsoft-word.html
- https://www.makeuseof.com/tag/8-formatting-tips-perfect-tables-microsoft-word/

Notes for the Teacher

- Demonstrate various ways to format a table.
- Explain how to use different formulas using appropriate examples.

CHAPTER

5 Mail Merge

After going through this chapter, you will be able to—

- **create** a data source and main document;
- **insert** the merge fields;
- **preview** the merged fields; and
- **demonstrate** the steps involved in the mail-merge process.

It is Hridhan's birthday next month. He is very excited as he is going to invite all his friends and a few relatives. He has prepared the guest list and wants to send the invitation as soon as possible.

'What are you thinking, Hridhan?' asks his father, Mr Padukone.

'I am thinking of an easy way to send invitation letters for my birthday,' replies Hridhan.

'This is possible using the mail-merge feature of Word. Let me tell you more about that tool,' tells his father.

What is Mail Merge?

The mail-merge feature in Word lets you create multiple letters, envelopes, name tags, and directories. It saves the effort and time of retyping the same letter over and over again.

Mr Padukone tells Hridhan about the terminology used when creating mail merge documents.

Main Document

The main document contains the content of the letter, envelope, or invitation to be sent. This document must be connected to a data source file. It is also known as the starting document.

Data Source

It consists of a list of recipients containing their names, addresses, phone numbers, and any other information. It is a separate file that contains the recipient's data. This data must be stored in a tabular format with rows and columns. The data source must be linked to the main document.

Merge Field

When a main document is created, the mail merge fields are inserted to those areas of the documents where the information of the recipient is to be inserted.

These fields, when inserted in the main document, appear surrounded by chevrons (<< >>). These chevrons are not displayed in the merged document.

Mail-Merge Process

Hridhan's father now tells him that there are three steps involved in creating a mail-merge document.

- Creating a main document
- Creating a data source
- Merging the main document and the data source file

Mail Merge Wizard

Hridhan opens a new Word document and follows these steps as told by his father.

- He clicks on the **Mailings** tab and locates the **Start Mail Merge** group.
- He now clicks on the **Start Mail Merge** button and selects the **Step-by-Step Mail Merge Wizard...** option.
- The **Mail Merge** pane opens on the right.

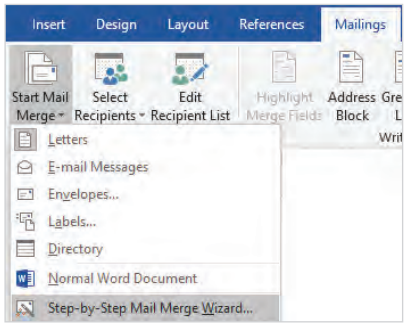


Fig. 5.1 Selecting the Mail Merge Wizard option

Creating a Mail Merge Document

Hridhan observes the Mail Merge pane on the right. He spots five different radio buttons on the pane. The first radio button, **Letters**, is selected by default. He finds the description of the option also listed thereon. He selects the radio buttons one by one and reads their descriptions to choose the most appropriate option.

Hridhan now selects the **Letters** option and clicks on **Next: Starting document**. By default, **Use the Current document** option is selected. His father tells him that he can select the **Start form template** option if he wants to create a new document using a template or the **Start from existing document** if a file is already saved on his computer. He selects the **Use the current document** option.

He clicks on the **Next: Select recipients** link under **Step 2 of 6** section.

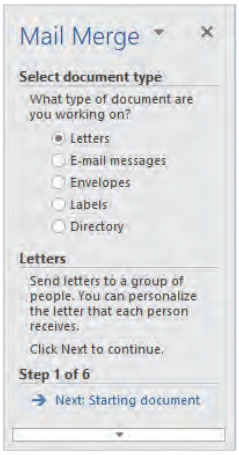


Fig. 5.2 Selecting Document Type

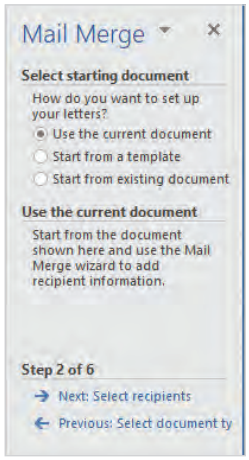

Mail Merge
Select starting document
How do you want to set up your letters?
Use the current document
Start from a template
Start from existing document
Use the current document
Start from the document shown here and use the Mail Merge wizard to add recipient information.
Step 2 of 6
Next: Select recipients
Previous: Select document ty

Fig. 5.3 Selecting Starting Document

Creating a Recipient List

'Now you have to create a list of recipients to whom you wish to send the invitations,' says Mr Padukone to Hridhan.

Hridhan observes these three radio buttons under the Select recipients option:

- Use an existing list
- Select from Outlook contacts
- Type a new list

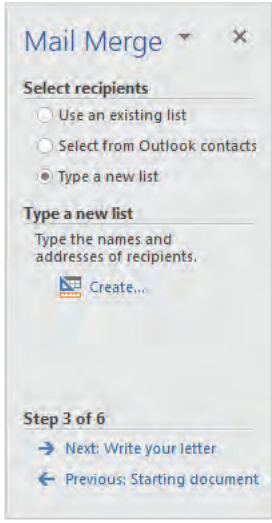


Fig. 5.4 Selecting Type a new list

He quickly selects the **Type a new list** radio button as he does not have any existing list of contacts. He then follows these steps as directed by his father.

- Under the **Type a new list** section, he clicks on the **Create** button.
- The **New Address List** dialogue box opens. He clicks on the **Customize Columns** button to add or remove the columns he wants.
- He then types the data in the individual fields. He clicks on the **New Entry** button to add a new row to the table.
- After entering the records, he clicks on the **OK** button.
- The **Save Address List** dialogue box opens.

Quick Tip

You can manually select the Recipients list option by clicking on the Select Recipients drop-down command in the Start Mail Merge group.

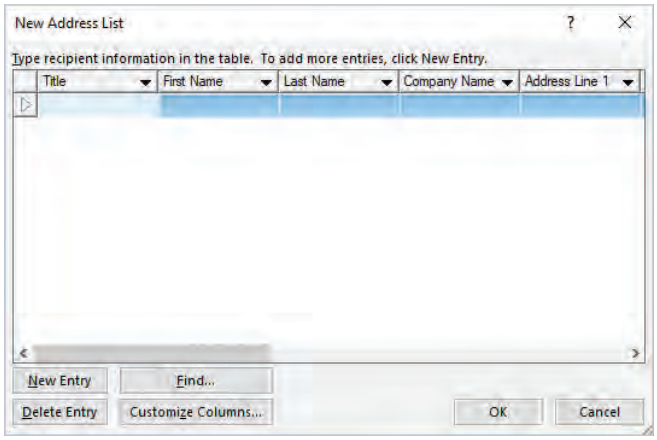


Fig. 5.5 New Address List dialogue box

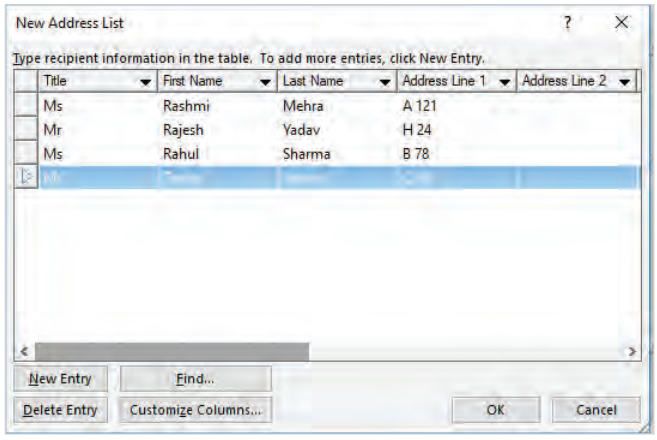


Fig. 5.6 Adding recipient's details

- He types in the name of the address list in the **File name:** box and clicks on the **Save** button.
- The **Mail Merge** dialogue box appears with all the fields. His father tells him that he can edit any data by clicking on the **Edit** button.
- He clicks on **OK**.

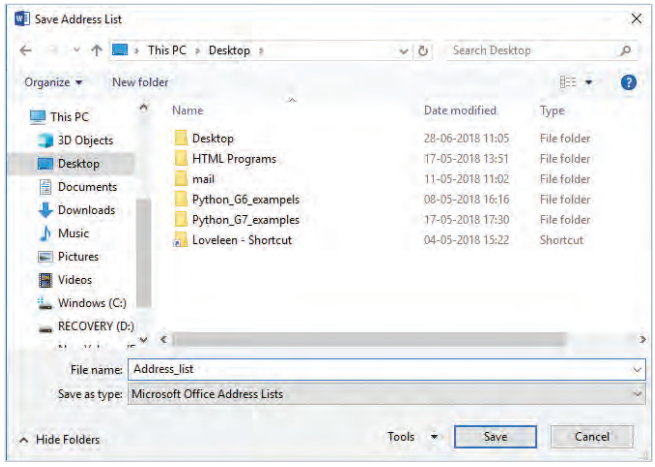


Fig. 5.7 Save Address List box

Now Naman clicks on the **Next: Write your letter** link under **Step 3 of 6** section.

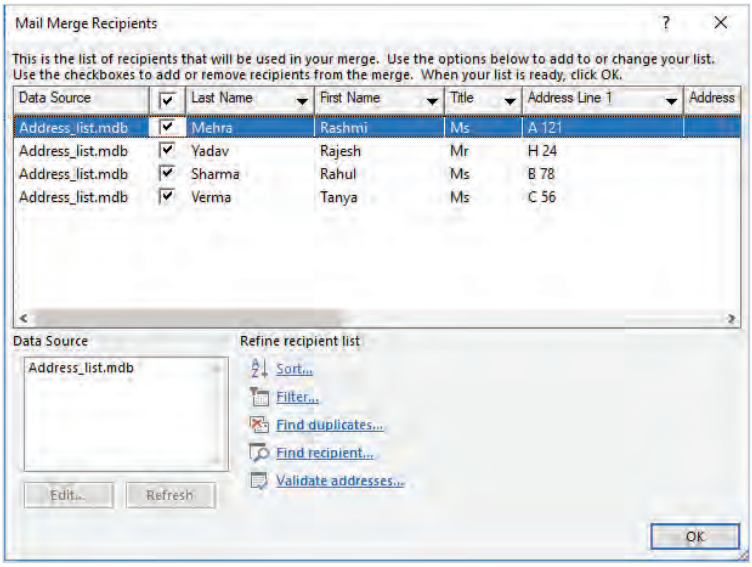


Fig. 5.8 Mail Merge Recipients dialogue box

Remember

The tick marks against the fields show that the records are selected. You can uncheck them if you do not want to include the records in the list.

Inserting Merge Fields

'This section lets you insert the merge fields in the document,' says Mr Padukone. He then explains the steps as follows.

- Type and format the letter as you want to send.
- Insert the merge fields by clicking on the **More items** in the task pane. The **Insert Merge Field** dialogue box opens.
- Select the desired field and click on **Insert**.
- Click on **Close** and repeat the steps if you want to insert more fields.

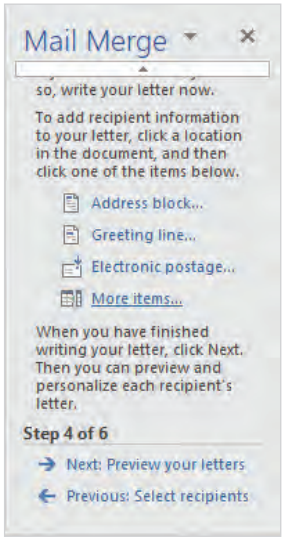

Mail Merge
so, write your letter now.
To add recipient information to your letter, click a location in the document, and then click one of the items below.
Address block...
Greeting line...
Electronic postage...
More items...
When you have finished writing your letter, click Next. Then you can preview and personalize each recipient's letter.
Step 4 of 6
Next: Preview your letters
Previous: Select recipients

Fig. 5.9 Selecting More items options

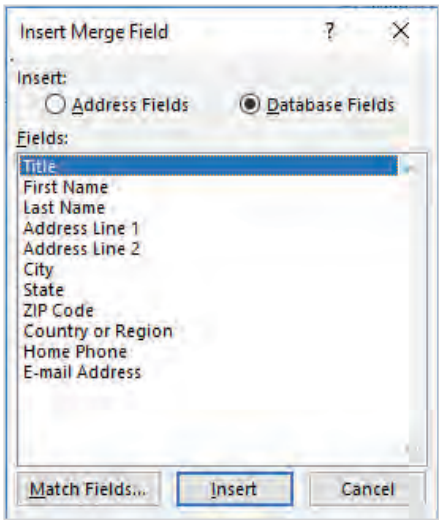


Fig. 5.10 Insert Merge Field dialogue box

Hridhan types his letter and adds the merge fields. His document now looks as shown in Fig. 5.11.

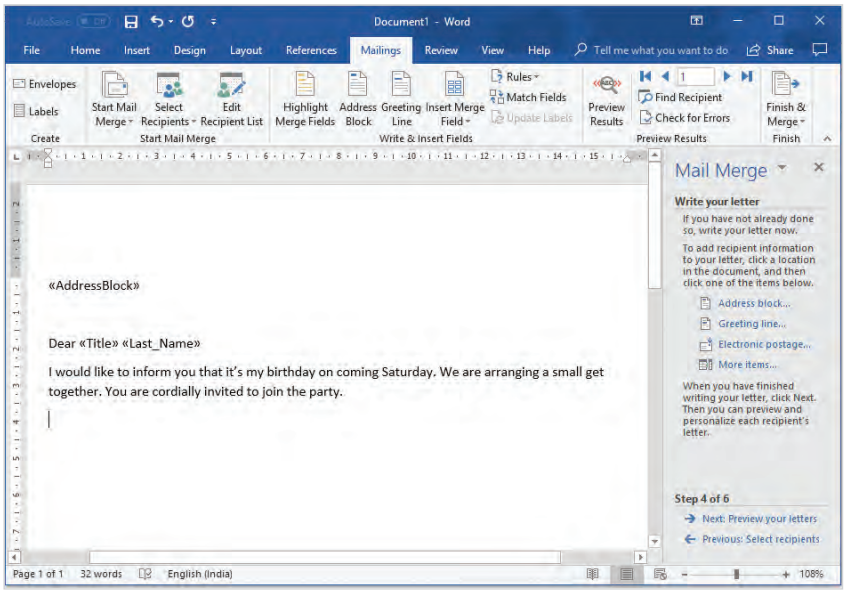

Document1 - Word
Mail Merge
«AddressBlock»
Dear «Title» «Last_Name»
I would like to inform you that it's my birthday on coming Saturday. We are arranging a small get together. You are cordially invited to join the party.
Step 4 of 6
Next: Preview your letters
Previous: Select recipients

Fig. 5.11 Inserting Merge Fields

Viewing the Merged Data

Hridhan clicks on the **Next: Preview your letters** link. His father tells him that he can click on the backward and forward buttons to preview all the letters for the individual recipients. He also tells him that he can click on the **Edit recipient list** to make any change or to exclude any of the recipients.

After previewing his letters, Hridhan clicks on the **Next: Complete the merge** link.

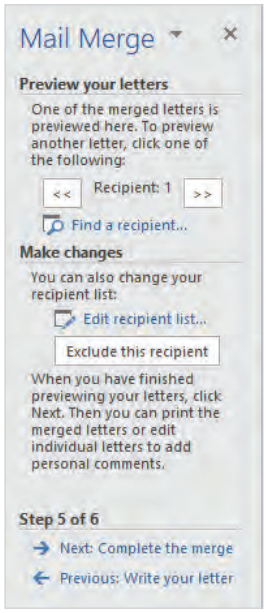

Mail Merge
Preview your letters
One of the merged letters is previewed here. To preview another letter, click one of the following:
Recipient: 1
Find a recipient...
Make changes
You can also change your recipient list:
Edit recipient list...
Exclude this recipient
When you have finished previewing your letters, click Next. Then you can print the merged letters or edit individual letters to add personal comments.
Step 5 of 6
Next: Complete the merge
Previous: Write your letter

Fig. 5.12 Previewing letters option

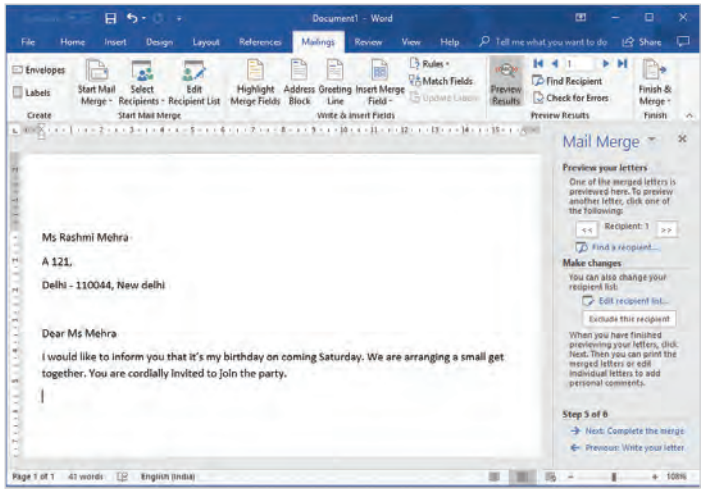

Document1 - Word
Mail Merge
Ms Rashmi Mehra
A 121,
Delhi - 110044, New delhi
Dear Ms Mehra
I would like to inform you that it's my birthday on coming Saturday. We are arranging a small get together. You are cordially invited to join the party.

Fig. 5.13 Previewing results

Printing the Merged Letters

The Mail Merge pane shows two options—**Print** and **Edit individual items**. Mr Padukone tells him that he can print all the documents by clicking on the **Print** option.

The **Merge to Printer** dialogue box appears. Mr Padukone tells Naman that he can choose to print the records as per his choice.

The file is saved as a normal file and can be emailed whenever required. The letters can be printed separately, so that these can be posted to everyone.

Mail Merge
Complete the merge
Mail Merge is ready to produce your letters.
To personalize your letters, click "Edit Individual Letters." This will open a new document with your merged letters. To make changes to all the letters, switch back to the original document.
Merge
Print...
Edit individual letters...
Step 6 of 6
Previous: Preview your letters

Fig. 5.14 Selecting Print option

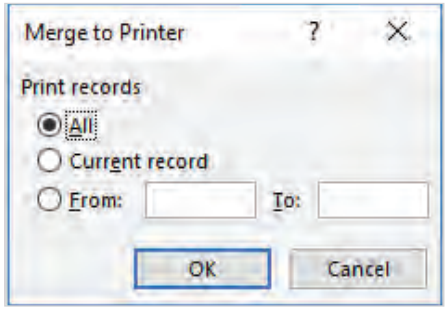


Fig. 5.15 Merge to Printer option

Quick Tip

You can click on the Finish & Merge drop-down button in the Finish group and choose to edit, print, or mail the documents.

Did You Know?

Sendblaster Free Edition is a free tool for mass messaging. The tool provides a nice reporting and tracking engine.

Key Terms

Main document	The document that contains the content
Data source	A document that contains a list of recipients
Merge field	A placeholder in the main document where a record from the data source is to be inserted

Recap

- The mail merge feature in Word is a useful feature for sending letters and creating envelopes for a large group of people.
- There are three main steps involved in creating a merged document—creating a data source, creating a main document, and merging the data source and the main document.
- A data source is a document that contains the names, addresses, phone numbers, and other information of the recipients.
- The main document contains the text that is common for all the recipients.
- The data source and the main document are merged to produce the final letters.

Exercise

A. Fill in the blanks.

1. The _____ document must be connected to a data source file.
2. The _____ lets you insert the data source field to the main document.
3. The data source can be created using _____, _____, and _____.
4. The _____ button temporarily merges the main document and data source so that you can view it.
5. The information in a data source is organized in a _____.

B. Write T for *true* or F for *false*.

1. The merge fields are surrounded by chevrons.
2. The data source contains the text to be sent.
3. An Excel sheet with a list of contacts can be used as a data source.
4. The main document is also known as the starting document.
5. Memos is the default document type for a mail merge.

C. Answer the following questions.

1. What is a data source?
2. Write the steps involved in the mail-merge process.
3. Explain the steps in creating a main document.
4. How will you use an Excel sheet as a data source?
5. What is the difference between the merge document and the main document?

Application-based Questions

1. Samaria's school is conducting a workshop for which they are giving gifts to each of the students. The workshop organizer wants to print the labels of all students with their names, classes, and roll numbers. How can the organizer do that? Write the steps.
2. Neha has to send letters to her employees. She took printouts of the letters. She now wants to take printouts of the envelopes for each of the employees. Help her to do this.

Lab Activity

Create a data source by entering data of your friends and relatives in a table in Word. Now write an invitation letter to invite them on your parents' marriage anniversary using the mail-merge feature.

Project

1. Your school is organizing its annual day on coming Friday. Create an invitation letter that has to be sent to the guardians of class 5 students. Type the invitation letter, and create a data list.
2. You have shifted to a new place. Using the mail-merge feature, invite your friends and relatives to the house-warming party.

Explore More

- Write the steps to manually carry out the mail-merge process (without using the Mail Merge Wizard).
- Find out the software programs that work similar to the mail-merge feature of Word.

Weblinks

- https://support.office.com/en-us/article/Use-mail-merge-to-create-and-send-bulk-mail-labels-and-envelopes-f488ed5b-b849-4c11-9cff-932c49474705
- http://smallbusiness.chron.com/advantages-mail-merge-feature-microsoft-word-79327.html
- https://www.techrepublic.com/blog/five-apps/five-mostly-free-mass-mailing-applications/

Notes for the Teacher

- Explain to students how other documents—labels, email messages, and envelopes—are used.
- Explain how a data source can be used from a database.

CHAPTER

6 More on PowerPoint

After going through this chapter, you will be able to—

- **add** images to a PowerPoint presentation and create a digital photo album;
- **make use of** SmartArt graphics to represent information graphically;
- **record** the desktop screen and **embed** it in a slide;
- **run** a slide show; and
- **print** a presentation.

Rashmi studies in class 5. She has read about the heritage sites in India in her social studies class. She now decides to create a PowerPoint presentation on this topic. She has learnt to use PowerPoint in her previous classes.

She creates the presentation and shows it to her elder brother, Rohit, who studies in class 9.

'Your presentation looks good, but it is too textual. You have not added any picture to it,' tells Rohit.

'How can I do that?' asks Rashmi.

'It is quite easy and simple. You must have learnt to add images to a Word document. You can add images to a presentation in the same way,' Rohit tells Rashmi.

Adding an Image

Fig. 6.1 Images group

Rohit guides Rashmi and she quickly follows these steps to insert an image to a slide.

1. She first clicks on the slide where she wants to add the image.
2. After locating the **Illustrations** group, she clicks on the **Pictures** button.
3. The **Insert Picture** dialogue box appears.
4. She selects the picture she wants to add and clicks on **Insert**.

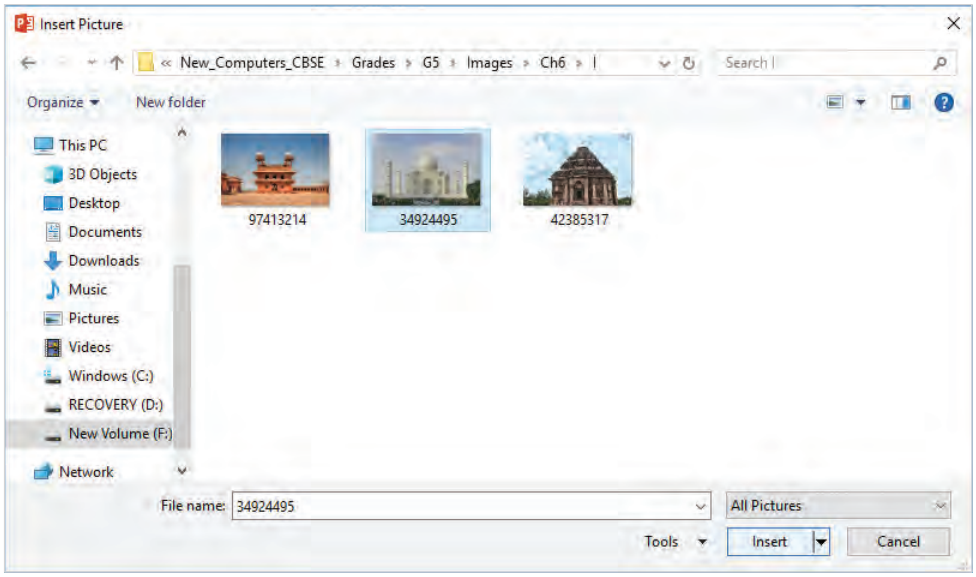


Fig. 6.2 Insert Picture dialogue box

The picture gets inserted to the presentation. Rashmi inserts all the images one by one.

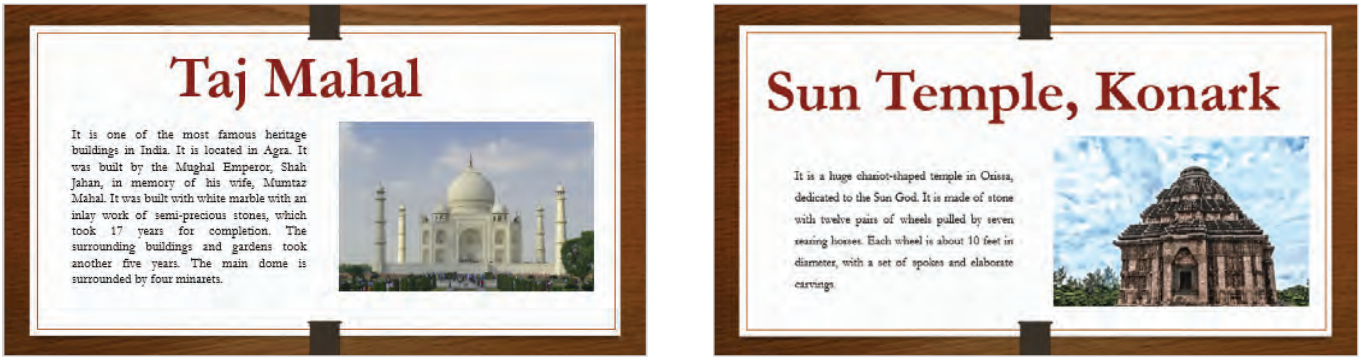

Taj Mahal
It is one of the most famous heritage buildings in India. It is located in Agra. It was built by the Mughal Emperor, Shah Jahan, in memory of his wife, Mumtaz Mahal. It was built with white marble with an inlay work of semi-precious stones, which took 17 years for completion. The surrounding buildings and gardens took another five years. The main dome is surrounded by four minarets.
Sun Temple, Konark
It is a huge chariot-shaped temple in Orissa, dedicated to the Sun God. It is made of stone with twelve pairs of wheels pulled by seven rearing horses. Each wheel is about 10 feet in diameter, with a set of spokes and elaborate carvings.

Fig. 6.3 Images inserted to slides

Rashmi observes the **Online Pictures** command in the **Illustrations** group. Rohit tells her that this command lets users insert pictures from online sources.

Adding a Screenshot

'Can I add a snapshot of any screen to a slide?' Rashmi asks Rohit.

Rohit tells her that there is a feature, called Screenshot, that can be used to add a snapshot to a slide in PowerPoint. He then guides her through the following steps—

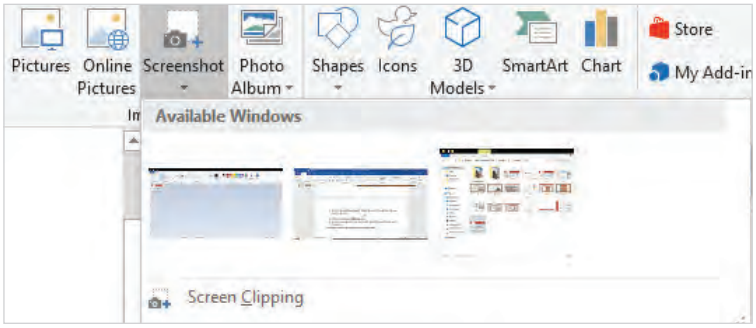


Fig. 6.4 Screenshot options list

1. Click on the **Screenshot** button in the **Illustrations** group.
2. A list of open windows appears. Select any one of the windows that you wish to capture.

OR

1. Click on the **Screen Clipping** option.
2. A faded view appears. Click and drag to select the area that you wish to capture.

The screen clipping appears on the selected slide.

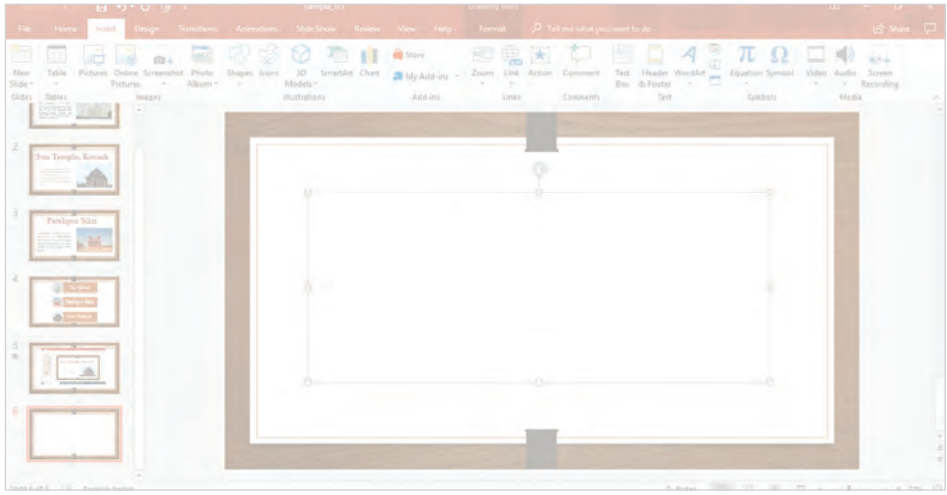


Fig. 6.5 Capture screen

Creating Photo Album

Rohit now tells Rashmi one more interesting feature of PowerPoint. He tells her that if she has a few pictures that she wants to show in her presentation, she can create a digital photo album. He also tells her that she cannot create a photo album of online pictures and she should have the images stored on her hard drive. He then guides

Rashmi through these steps—

1. Click on the **Photo Album** command in the **Illustrations** group.
2. The **Photo Album** dialogue box appears.
3. Click on the **File/Disk** button to insert the pictures that are stored on the computer. The **Insert New Pictures** dialogue box appears.
4. Select the picture you want to insert and click on the **Insert** button. You can press and hold the **Ctrl** key while clicking to select multiple images. To select a range of images, press and hold the **Shift** key and click on the first and last images.
5. You can add captions to all the images by selecting the **Captions below All pictures** check box.
6. The preview of the images is shown under the **Preview** section.
7. By default, the layout of the album is **Fit to Slide**, which fills each slide with a picture. You can change layout using the **Picture layout** drop-down list.

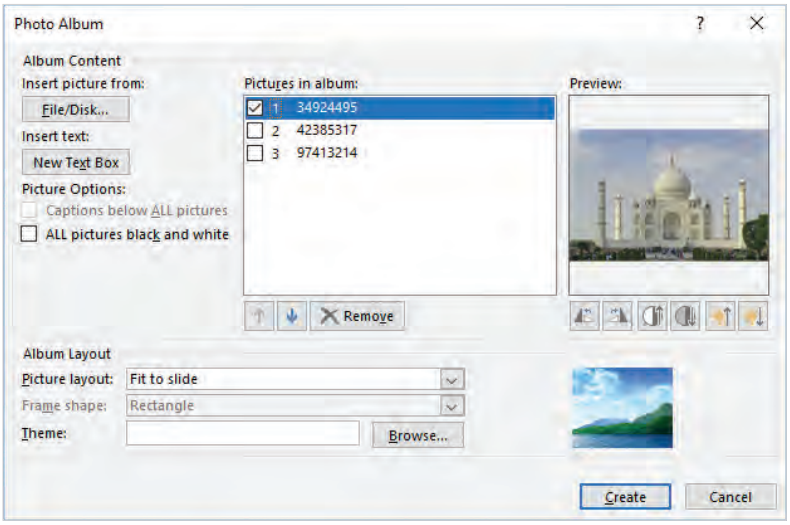


Fig. 6.6 Photo Album dialogue box

Quick Learn

Collect pictures of different festivals of India. Create a photo album in PowerPoint and share it with your friends.

8. You can use **the Frame shape** drop-down list to apply frame shapes, such as a rounded rectangle or centre shadow rectangle.
9. The **Browse Theme** command can be used to browse and apply a theme to a photo album.
10. The **Up** and **Down** arrow buttons below the picture list are used to reorder the images, and the **Remove** button is used to delete the picture from the album.
11. The buttons below the **Preview** section are used to adjust the brightness and contrast or rotate the picture.
12. When you are done, click on the **Create** button to see the photo album.

Here is the photo album created by Rashmi.

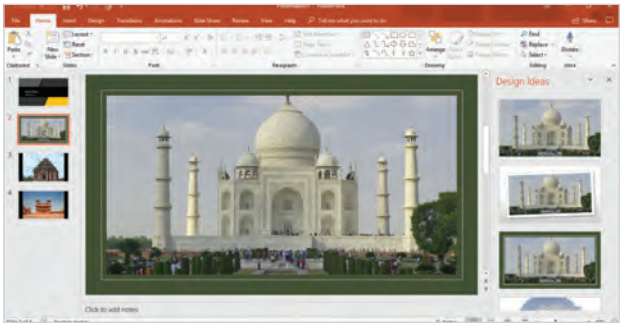


Fig. 6.7 Photo Album

Inserting a SmartArt Graphic

Rohit now introduces Rashmi to another interesting way of presenting text in PowerPoint—SmartArt graphic.

'SmartArt graphic is a way of representing text visually using stylized graphics,' Rohan tells Rashmi.

Rashmi follows these steps to insert a SmartArt graphic.

1. Firstly, she adds a new slide to her presentation.
2. She then clicks on the **SmartArt** button in the **Illustrations** group.
3. The **Choose a SmartArt Graphic** dialogue box opens.
4. She notices various categories on the left and the SmartArt graphics template on the right.
5. She clicks on the **Picture** category type and selects one of the templates on the right.
6. She then clicks on **OK**.

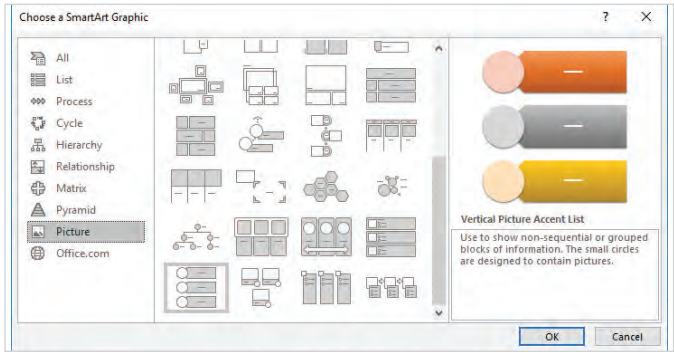


Fig. 6.8 Choose a SmartArt graphic dialogue box

The SmartArt graphic gets inserted to the presentation.

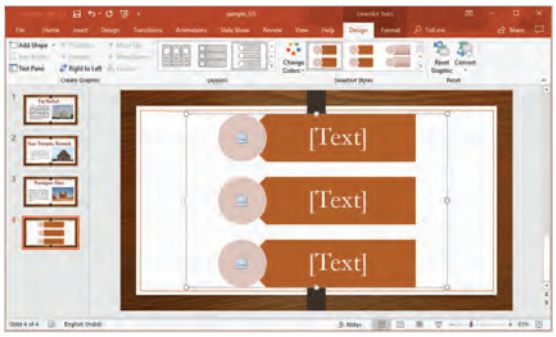


Fig. 6.9 SmartArt graphic

Adding Text to SmartArt Graphic

Rashmi has understood where she has to add the text and image. She follows these steps to add text and images—

1. She selects the SmartArt graphic.
2. She clicks on the desired shape and starts typing.
3. She then clicks on the Image icon to add the image to the SmartArt graphic.

Fig. 6.10 Adding text to the SmartArt graphic

Screen Recording

Rohit now tells Rashmi how she can record her computer screen and add audio to it. This is like creating a tutorial video. 'You can help your friends by making a video showing what you have learnt in PowerPoint,' tells Rohit to Rashmi.

'This is an amazing feature. Let's start using it,' says Rashmi.

Rohit then guides her through the following steps—

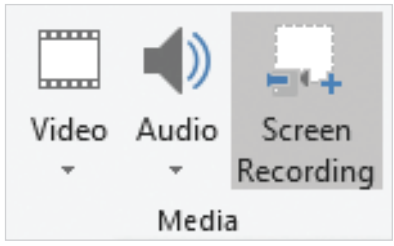


Fig. 6.11 Media group

1. Click on the **Screen Recording** command in the **Media** group of the **Insert** tab.
2. A small control dock appears on the screen and the pointer changes to a plus symbol.
3. Drag to select the area of the screen that you wish to record.

Fig. 6.12 Screen recording

4. Click on **Record**. All your activities on the screen will be recorded.
5. To control the recording, do the following—
   a) To temporarily stop the recording, click on the **Pause** button.
   b) To resume the recording, click on the **Record** button.
   c) To end the recording, click on the **Stop** button.
6. The recording is now embedded on the slide. Click on the **Play/Pause** button on the control dock to play or pause the video.

Fig. 6.13 Screen recording embedded on a slide

Quick Tip

While recording, the dock disappears from the screen. To stop the recording, either use Windows key + Shift + Q keyboard shortcut or move the mouse pointer on the top of the screen to bring back the dock.

Checkpoint

Answer the following questions.

1. How is the screen recording feature useful in a PowerPoint presentation?
2. Mention the steps to insert an image and a screenshot to a slide.
3. Use a SmartArt graphic and show the life cycle of a silk moth.

Inserting Equations

Rohit now tells Rashmi that she can even add mathematical equations to her presentation. He further tells her that she can even build her own equations using PowerPoint inbuilt library of symbols and structures.

Rashmi then follows these steps—

1. She locates the **Symbols** group on the Insert tab and clicks on the **Equation** drop-down arrow button.
2. Rohit tells her that she can select any of the preformatted equations from the list.
3. She clicks on the **Insert New Equation** option.
4. Two additional tabs—**Forma**t and **Design**—appear on the ribbon. She clicks on the **Design** tab.
5. She selects the structure and picks the desired symbol to make an equation.

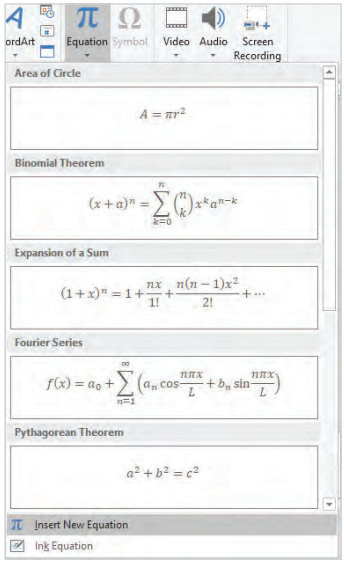


Fig. 6.14 Insert New Equation option

Fig. 6.15 Design tab

Slide Show

'It is time to present and preview your slides, Rashmi. This presentation of slides is called a slide show,' says Rohit.

'I am eager to see how our presentation looks,' says Rashmi.

Rohit shows the steps to Rashmi to start a slide show.

1. He clicks on the **Slide Show** tab.
2. He then asks Rashmi to choose one of the following options—

Fig. 6.16 Start Slide Show group

- **From Beginning—**This option lets you start the slide show from the first slide.
- **From Current Slide—**This option lets you start the slide show from the current slide.
- **Custom Slide Show—**This option gives you the flexibility to include only the slides you want to show.

Rashmi selects the **From Beginning** option. The slide show begins from the first slide.

'Can I move a slide backward or forward during a slide show?' asks Rashmi.

'Yes, there are three ways to move to the next slide. You can press the Space bar, click on the mouse, or use the right arrow key. To move to the previous slide, you can use the left arrow key,' tells Rohan.

He further adds, 'You can move the mouse pointer to the bottom left corner and click on the backward and forward arrow buttons to move backward or forward'.

Quick Tip

The shortcut key to run a slide show is F5.

Ending a Slide Show

'Can I exit the presentation mode?' asks Rashmi.

'Yes, you can press the **Esc** key to end a slide show anytime you want. You can also click on the **Slide Show Options** buttons in the bottom left corner of the window and select the **End Show** option.

Fig. 6.17 Slide Show Options buttons

Printing a Presentation

'You can also print your presentation as you do with your Word documents,' says Rohit.

'I know how to print a Word document. Are steps the same?' asks Rashmi.

'Yes, you can follow the same steps,' tells Rohan.

Rohit then clicks on the **File** menu and selects the **Print** option. Rohit shows the Print pane to Rashmi.

Fig. 6.18 Print pane

Did You Know?

Microsoft PowerPoint allows users to create virtual slide show presentations displaying text, images, shapes, and videos.

Key Terms

Screenshot	An image of data, program, or window displayed on the screen
Photo Album	A presentation of a collection of photos
SmartArt	A way of visually representing ideas and information
Slide show	A presentation of slides arranged in sequence

Recap

- PowerPoint has many features that make a slide informative and attractive.
- Some of the features are adding pictures, screenshots, photo albums, and SmartArt graphics.
- A SmartArt graphic lets us display our data graphically.
- The slide show feature enables us to view the slides in a presentation in a sequential manner on the screen.
- It is also possible to print a presentation.

Exercise

A. Choose the correct options.

1. Which of the following tabs will you use to add a screenshot to a slide?

   a) Home b) Insert c) View d) Layout

2. Where do you find the Screen Clipping option?

   a) Photo Album b) Screen Recording

   c) Screenshot d) Pictures

3. Which of the following options will you choose to run a slide show from a current slide?

   a) From Beginning b) From This Slide

   c) From Current Slide d) Custom Slide Show

4. Which of the following function keys will you use to start a slide show?
   a) F4 b) F5 c) F6 d) F7
5. Which of the following tabs will you click on to run a slide show?
   a) Home b) Insert c) Animations d) Slide Show

B. Write T for *true* or F for *false*.

1. By default, the layout Fit to Slide is selected while adding a photo album. ☐
2. It is possible to add captions to the images added to a photo album. ☐
3. The SmartArt graphic lets us present our information graphically. ☐
4. To move to the next slide during a slide show, we need to press the right arrow key. ☐
5. We cannot create a photo album of online pictures. ☐

C. Fill in the blanks.

1. The _____ key is used to exit the slide show.
2. To move to the previous slide during the slide show, press the _____ arrow key.
3. To insert pictures from the online sources, click on the _____ command.
4. The _____ key is used to select multiple images to add to a photo album.
5. The Photo Album command is found on the _____ tab.

D. Answer the following questions.

1. Write the steps to add a SmartArt graphic.
2. How will you create a photo album? Mention the steps.
3. Discuss various options to run a slide show.
4. How can you embed a screen recording in a slide?
5. What is the utility of a screenshot?

Application-based Questions

1. Niharika has found some of her old photographs on her computer. She wants to create a digital album. How can she do that? Help her in doing the task.
2. Nitish has created a presentation. He wants to take a printout of four slides on a page. How can he do that?

Lab Activity

1. Create a presentation about yourself and save it as 'About Me'. The presentation should contain a minimum of four to five slides. You may include the following information—

   a) Interesting facts about me

   b) My future goals

   c) My hobbies

   d) My favourite sport

   Add pictures, wherever possible. Run a slide show in the lab to show it to your teacher and classmates.

2. Create and embed a recording in a PowerPoint presentation showing the steps for the following—

   a) Creating a new folder in Windows

   b) Deleting a folder

   c) Selecting multiple folders

   You may also record and add your audio describing the steps.

3. Use an appropriate SmartArt graphic to illustrate the process of photosynthesis in plants.

Project

1. List down the states in India you have visited so far. What do you remember about these states? Explore more about these states. Now, create a PowerPoint presentation of minimum four slides on each state. You may include the following information—

   a) Location of the state, capital city, its national and international boundaries, and related images of the state

   b) Landforms and rivers

   c) Food habits, languages spoken, and festivals celebrated

   d) Major cities and tourist attractions

   You may also ask your elders about the states they have visited.

2. You must have read about Mahatma Gandhi and his contribution to the Indian freedom struggle. His principles of non-violence and civil disobedience have always inspired the humankind. Gather more information about him and the major events that took place in his life. (If possible, search for his autobiography, *My Experiments with Truth*.) Now make a PowerPoint presentation, named 'Mahatma Gandhi', and create a timeline showing all the major events in the chronological order. You may also include the following in your presentation—
   a) Turning point in Mahatma Gandhi's life
   b) His contribution to the freedom struggle—major movements and their impact

Explore More

- Explore more commands (other than those given in the chapter) on the Insert tab.
- Find out how a screen recording embedded on a slide can be saved on a computer as a standalone file.

Weblinks

- https://www.presentation-process.com/powerpoint-smartart.html
- https://24slides.com/presentbetter/how-to-make-timeline-in-powerpoint/

Notes for the Teacher

- Encourage students to explore all the options for adding different objects.
- Demonstrate the steps to create a photo album and embed a screen recording.
- Explain the utility of the all the features discussed in the chapter.

CHAPTER 7

Programming in Scratch

After going through this chapter, you will be able to—

- create animations in Scratch using Events, Sensing, Operators, and Data blocks.

It is Sunday and Naina is enjoying her day at home. She has done her homework and decides to have some fun with Scratch. She quickly goes to the room where her computer is kept and starts the Scratch program. She has really enjoyed working on Scratch ever since she was introduced to it.

Naina's uncle, Mr Kumar, is here. He has come to see Naina.

'Hey, Naina! Are you working on Scratch?' asks Mr Kumar.

'Hello Uncle. Yes, it is Scratch. I learnt about it in my previous classes,' says Naina.

'Why don't you animate a story?' asks Mr Kumar.

'That sounds interesting, Uncle. But is it possible?' asks Naina.

'Of course, you will enjoy it,' Mr Kumar assures her.

'You will have to help me, Uncle,' says Naina. Mr Kumar replies in the affirmative.

Naina opens the Scratch window.

'See, the blocks here have different shapes. Do you know why?' Mr Kumar asks Naina showing her the blocks in the Scratch window.

Mr Kumar then goes on to explain each block to Naina.

Hat block—This type of block is used to start a script. It is rounded on the top so that no block can be placed above it. Only the bottom of this block has a notch where other blocks can be stacked.

Scratch block—This block is designed in a way so that other blocks can be stacked above and below it. When two stack blocks are connected, the commands are executed in the order from top to bottom.

Reporter block—This block contains a value that can be a numeric value or string.

Boolean block—This block is an elongated hexagonal block and contains a condition. It gives 'true' or 'false', '1' or '0', or 'Yes' or 'No' values when it is invoked.

C block—This block is shaped like a 'C' and can fit other blocks inside it. These blocks perform loops and conditions.

Cap block—This block is used to stop a script or any project from running. There are two cap blocks under the Control category.

Events Blocks

Naina is excited to create an animation. She has even decided the characters she is going to use in her story.

'I am going to have a dog and a rat in my story,' says Naina.

'That's great, Naina. We will now do some interesting things with these characters. Before that let me explain to you the Events blocks,' tells Mr Kumar to her.

Mr Kumar tells Naina that Event blocks are colour-coded in brown, and these trigger either a single script or multiple scripts.

'You must have used the

block, which is an Events block. It triggers an action or executes the blocks placed just below it when the Green Flag is clicked on. Here are some other Events blocks,' says Mr Kumar.

Quick Tip

To remove or delete the code blocks not required in a program, click on the Scissors icon and then click on the code you want to remove.

Blocks	Functions
	Runs the script when a key is pressed
	Runs the script when the sprite is clicked
	Runs the script when the backdrop changes to a particular backdrop
	Runs the script when a value is greater than another value
	Runs the script when a specific message is received by a sprite
	Allows scripts send broadcast without any pauses in the scripts
	Allows scripts send broadcast and wait until the specified time ends

Naina has now understood all the blocks explained to her by her uncle. She is all set to create an animation on her own. She decides to make the Dog speak. She then follows these steps.

1. She adds a new sprite **Dog 2** and a backdrop **blue sky** from the library.
2. After clicking on the Events block palette, she drags the block into the scripts area.
3. She then drags the block and places it under the block and changes the value to 'Hello, I am Zack'.
4. Mr Kumar now asks her to plug the block. She does so and then adds the block. She changes the value to 3 in the repeat block.
5. She now adds the required blocks to the repeat block. Thereafter, she places the and blocks under the block and changes the value of the block.

a) b)

Fig. 7.1 Making a sprite speak

Sensing Blocks

Mr Kumar appreciates Naina, 'Great job, Naina! You can move ahead and introduce your next character in the story.'

He then introduces Sensing blocks to Naina.

'Sensing blocks are colour-coded in light-blue. These are used to detect different factors in a project,' he tells Naina.

He then explains some of the sensing blocks to Naina.

Blocks	Functions
touching color ?	Checks if the sprite is touching a specific colour and evaluates to true
touching mouse-pointer ?	Checks if the sprite is touching mouse pointer, another sprite, or Stage edge and evaluates to true
key space pressed?	Gives the result as true if a specific key is pressed
color is touching ?	Gives the result as true if a colour on its sprite touches another colour
ask What's your name? and wait	Used to ask a question from the user (It then stores the input entered in the answer block.)
answer	Stores the most recent input entered by the user

Naina now continues to animate her story with the help of her uncle. Both of them use the Sensing blocks and make Zack do some interesting activities.

1. She drags the block from the **Control blocks** palette and plugs it below the block.
2. After this, she adds the block to the block.
3. Thereafter, she pulls the block and plugs it under the block. She writes the following text in the **Say** block:

   'Oh! Your pointer is blocking my way. Move it aside.'
4. Finally, she plugs the block in the **else** block.

While running her script, she places the mouse pointer on Zack. This is how he responds.

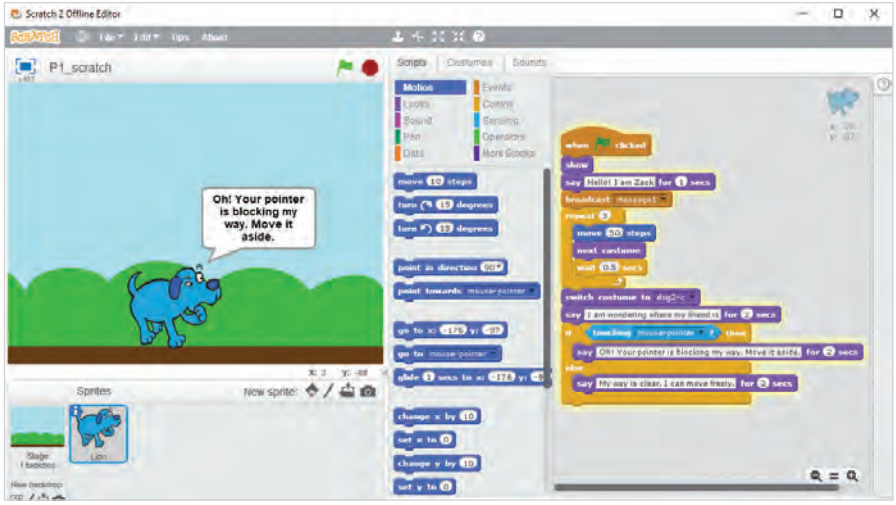


Fig. 7.2 Using the Sensing block

Operators Blocks

'It is quiz time now,' says Naina's uncle.

Naina is curious to know how a quiz can be created with Scratch. Mr Kumar introduces to her some more blocks.

Operators blocks are colour-coded in light green. These are used to perform mathematical operations and string operations.

Naina's uncle then lists some of the operators blocks.

Blocks	Functions
	Performs addition
	Performs subtraction
	Performs multiplication
	Performs division
	Checks if the first value is less than the second value (returns true if it is less and false if not)
	Checks if the first value is greater than the second value (returns true if it is greater and false if not)
	Checks if the first value is equal to the second value (returns true if it is equal and false if not)
	Picks a random integer within the specified range
	Joins the two given values and displays the result

Data Blocks

'Now look at these blocks, Naina,' her uncle points to the Data blocks.

When Naina clicks on the Data blocks, she observes that there are only two categories—**Make a variable** and **Make a list** in it.

She asks her uncle, 'What is a variable?'

Her uncle explains to her that a variable is a placeholder whose value can vary.

He then guides her through these steps.

1. To create a variable, click on **Make a variable** button. The **New Variable** dialogue box appears.
2. In the **Variable name** box, type an appropriate name for a variable. Click on **OK** button.
3. On defining a variable, the variable blocks get filled with the new variable that has been created.

Mr Kumar now explains the functions of variable blocks to Naina.

Blocks	Functions
Fahrenheit	Holds the value of the variable
set Fahrenheit to 0	Assigns a value to the specified variable
change Fahrenheit by 1	Changes the variable by a given amount
show variable Fahrenheit	Shows the variable on the stage
hide variable Fahrenheit	Hides the variable from the stage

'Let us now create a conversion calculator. It will convert the temperature entered by us in Celsius to Fahrenheit. Celsius and Fahrenheit are two units for measuring temperature,' Mr Kumar tells Naina.

'Great! Let us start, Uncle,' Naina responds.

Both of them work together and their script is ready now.

'It is time to run the script,' says Naina.

'Yes, click on the Green Flag and there you go,' says Mr Kumar.

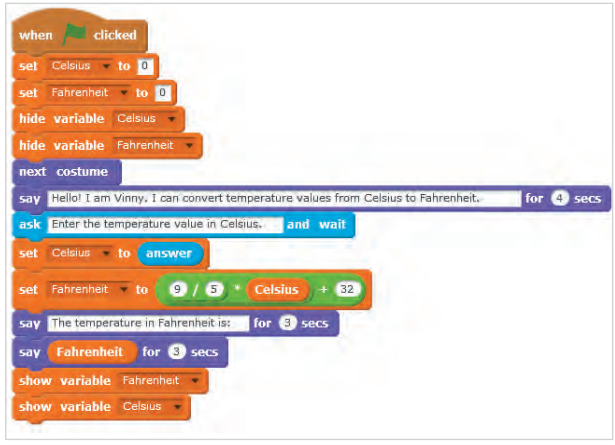

when clicked
set Celsius to 0
set Fahrenheit to 0
hide variable Celsius
hide variable Fahrenheit
next costume
say Hello! I am Vinny. I can convert temperature values from Celsius to Fahrenheit. for 4 secs
ask Enter the temperature value in Celsius. and wait
set Celsius to answer
set Fahrenheit to 9 / 5 * Celsius + 32
say The temperature in Fahrenheit is: for 3 secs
say Fahrenheit for 3 secs
show variable Fahrenheit
show variable Celsius

Fig. 7.3 Script for temperature conversion

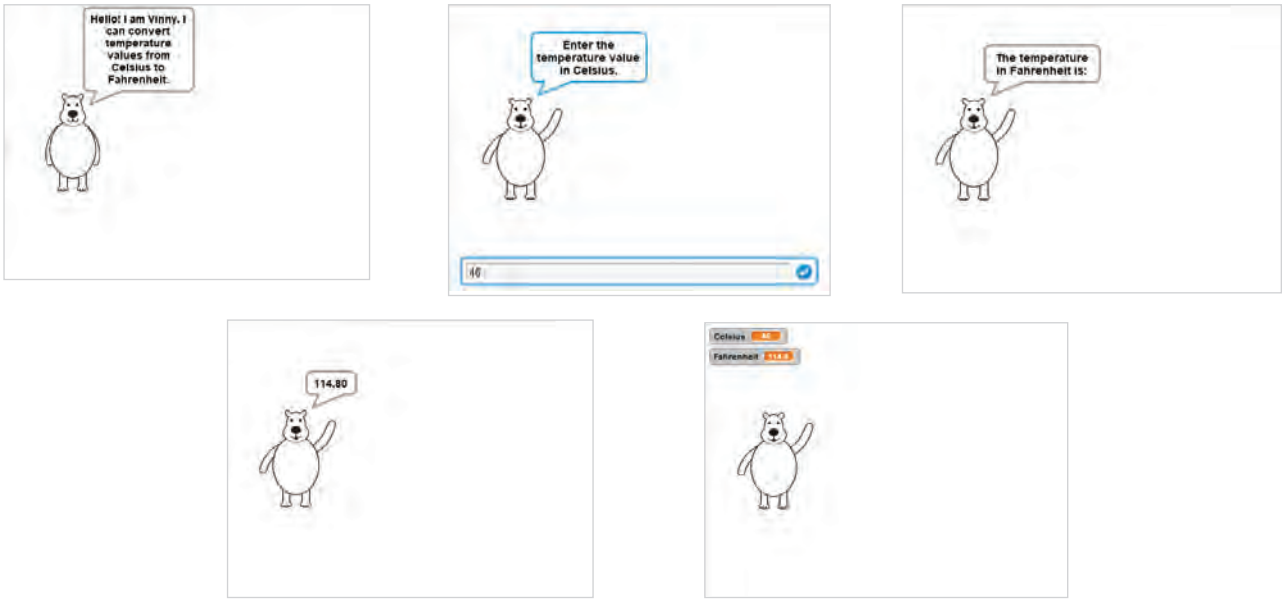

Hello! I am Vinny. I can convert temperature values from Celsius to Fahrenheit.
Enter the temperature value in Celsius.
40
The temperature in Fahrenheit is:
114.80

Fig. 7.4 Output of the previous script

Example 1 Creating a ping-pong ball game

Mr Kumar now helps Naina in creating a ping-pong ball. 'You have to control the ball to touch the red line. Try to play for the longer time. You can use left and right arrow key as controls,' says Mr Kumar to Naina.

Here are the steps that Naina follows—

1. She starts a new project and deletes the cat sprite.
2. She now adds colour background using the Paint Editor option.
3. Mr Kumar asks her to add the **Ball** sprite from the **Sprite Library**.
4. Naina now adds the **Paddle** sprite from the **Sports** category and the Line sprite.

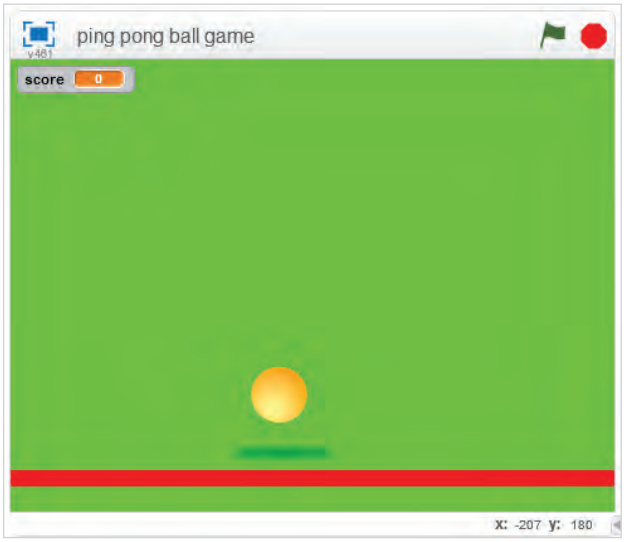


Fig. 7.5 Creating a ping-pong ball game

5. Naina now clicks on the Ball sprite and adds the following script for it to the Scripts area.

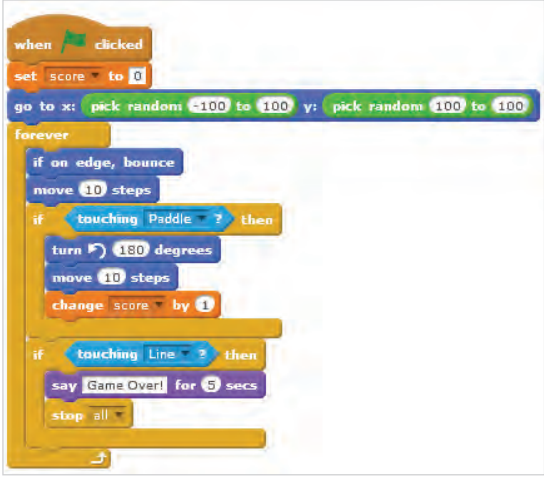

when clicked
set score to 0
go to x: pick random -100 to 100 y: pick random 100 to 100
forever
if on edge, bounce
move 10 steps
if touching Paddle ? then
turn 180 degrees
move 10 steps
change score by 1
if touching Line ? then
say Game Over! for 5 secs
stop all

Fig. 7.6 Script for the ball sprite

6. She then writes the following scripts for the Paddle sprite.

Fig. 7.7 Script for the paddle sprite

7. Naina clicks on the Green Flag to play the game.
8. Mr Kumar tells her to use the left and right arrow keys to move the paddle.

Key Terms

Variable	An element in Scratch that stores a value

Recap

- The Events blocks are used to trigger one or more scripts. These blocks are colour-coded in brown.
- The Sensing blocks are light-blue coloured blocks, which are used to determine various factors in a script.
- The Operators blocks are used to perform mathematical operations. These blocks are light green in colour.
- A variable is an element that is used to store a value. These values can be numbers or strings.
- Data blocks are used to create a variable.

Exercise

A. Choose the correct options.

1. Which of the following blocks will evaluate to true if a sprite touches another sprite?

   a)

   b)

   c)

   d)

2. What does the

block store?

   a) The input entered by the user
   b) The value of the defined variable
   c) Always holds the value true
   d) None of these

3. Which of the following colour codes do the Sensing blocks represent?

   a) Brown
   b) Green
   c) Blue
   d) Purple

4. Which of the following blocks will trigger an action when you click on the sprite?

   a)

   b)

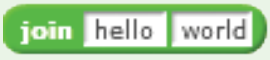
   c)

   d)

5. What of the following blocks is used to perform division?

   a)

   b)

   c) 

   d)

B. Fill in the blanks.

1. The

block returns _____ if the first value is equal to the second value.
2. The _____ block joins the two values.
3. The Operator blocks are colour-coded in _____.
4. The _____ type of block contains a value.
5. The list block is available under the _____ blocks.

C. Write T for *true* or F for *false*.

1. The broadcast block sends messages without pausing the script.
2. Addition, subtraction, multiplication, and division can be performed using the Events blocks.
3. A variable is created using the Operators blocks.
4. The Sensing blocks trigger an action.
5. The value of a variable is fixed in a script.

D. Answer the following questions.

1. What are the Operators blocks? How can you use them?
2. How are the Sensing blocks used?
3. What is a variable? How will you define a variable in Scratch?
4. What are stack and reporter blocks?

Application-based Questions

1. Arrange the blocks given in Fig. A in the correct sequence to create a script that asks the name from the user and stores it in a variable. It then asks the age and stores it in another variable. The script then displays the message as 'Your name is <yourname> and age is <age>'.
2. Kriti has written a script in Scratch. The script is shown in Fig. B. What do you think the script will do?

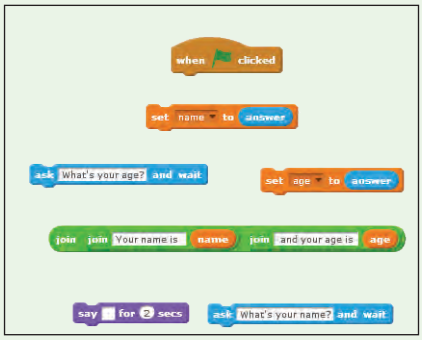

when clicked
set name to answer
ask What's your age? and wait
set age to answer
join join Your name is name join and your age is age
say for 2 secs
ask What's your name? and wait

Fig. A

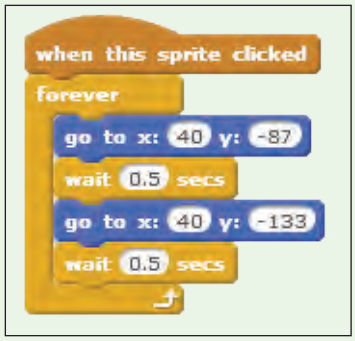


Fig. B

Lab Activity

1. Write a Scratch script to input a number from the user. Check whether the number is even or odd. If the number is even, display 'The number is even'. If not, then display 'The number is odd'.

2. Add any two sprites using the Sprite Library. Move the sprites and if the first sprite touches the second, it should step backward.
3. Write a Scratch script to ask five questions from the user. If the answer is correct, increase the score by 1, and if not, decrease it by 1. You may ask the following questions—
   a) What is the LCM of 30, 40, and 50?
   b) What is the HCF of 12, 14, and 16?
   c) What is the sum of 14 minutes 28 seconds and 2 minutes 43 seconds?
   d) What is 2:30 am in 24-hour clock format?
   e) How long is one side of a square garden if it has a fencing of length 48 m?

   You may play different sounds for the correct and incorrect answers.

Project

1. Create a maze game using Scratch. Set the sprite at one corner of the maze, and move it through the maze to the other corner. Use the arrow keys to move the sprite.
2. Create a game in which the user has to guess a number. If the user guesses a wrong number, the script should tell the user whether the guess was too high or too low.

Explore More

- Find out and make use of the blocks that are not covered in this chapter under all the categories of blocks.
- Find out the number of hat, stack, reporter, Boolean, and cap blocks.

Weblinks

- https://en.scratch-wiki.info/wiki/Blocks
- https://scratch.mit.edu/help/videos/

Notes for the Teacher

- Make sure students are able to distinguish between blocks of various shapes and their categories.
- Encourage students to read some popular children stories and depict them in Scratch.

CHAPTER

8 Introduction to Excel

After going through this chapter, you will be able to—

- **start** and **close** an Excel window;
- **explain** the functions of the components of an Excel window; and
- **insert** data into an Excel worksheet.

Jaya has learnt about units of measurements in maths. She wants to create a place value chart to understand the relationship between the units of length, mass, and capacity. She starts creating a table in her exercise book.

Place Value	Thousands (1000)	Hundreds (100)	Tens (10)	Ones
Prefix	kilo	hecto	deca	
Measures of length	kilometre (km)	hectometre (hm)	decametre (dam)	metre (m)
Measures of mass	kilogram (kg)	hectogram (hg)	decagram (dag)	gram (g)

'What are you doing, Jaya?' asks her mother.
'I am creating a table on different units of measurements that I have learnt today,' replies Jaya.

'Why don't you use Excel, Jaya? It helps us manage data in a better way,' tells her mother.

'Can you tell me more about Excel and teach me how to use it?' asks Jaya.

'Of course,' says her mother.

Jaya's mother tells her that Microsoft Excel is a spreadsheet program that is one of the components of the Microsoft office suite. It lets us store, analyze, and manipulate data.

'We can even do calculations on the data by using formulas in Excel,' Jaya's mother tells her.

Jaya is amazed by the fact and wonders if she can convert one metric unit to another.

Starting Excel

Jaya's mother now asks her to start Excel. Jaya then follows these simple steps to start Excel with the help of her mother.

1. She clicks on the **Start** button and then on the **Excel** option.

2. The **Excel** window opens. Jaya clicks on the **Blank workbook** option. Her mother tells her that she can also use a template.

Fig. 8.1 Starting Excel

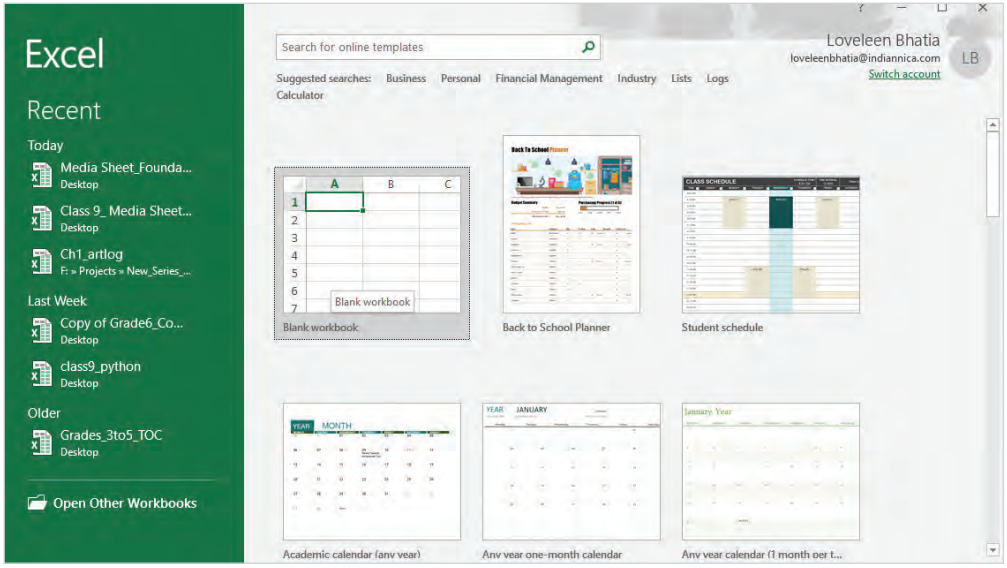


Fig. 8.2 Workbook options

A blank workbook opens on the screen.

Components of the Excel Window

Jaya's mother tells her that most of the components of Excel are the same as in other Microsoft Office applications, but some are specific to Excel. She then explains to her different components of the Excel window.

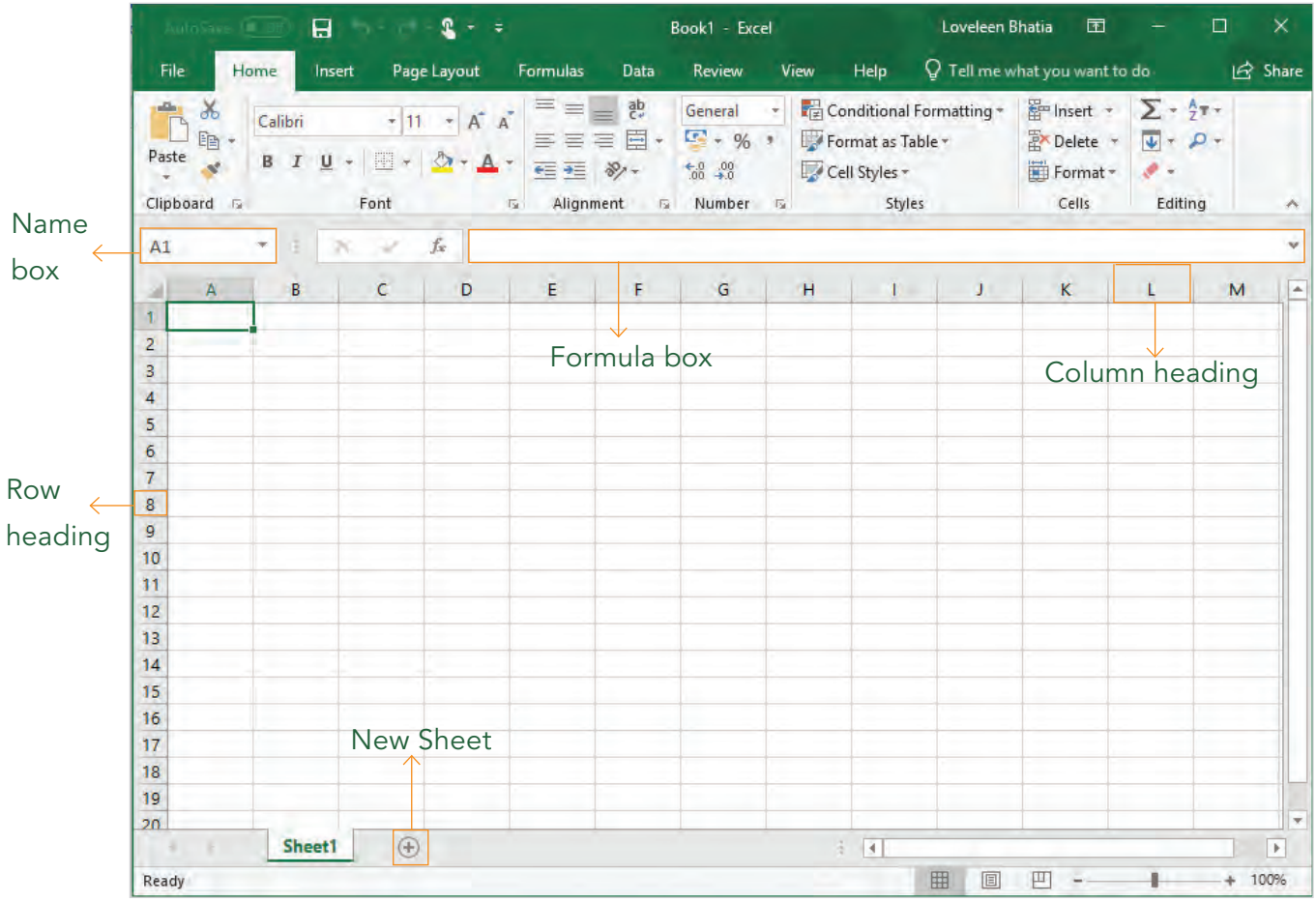


Fig. 8.3 A blank workbook

Cell

A cell is the basic component of a worksheet where data is entered. The intersection of a row and a column forms a cell. In Excel, each cell is identified by its cell address. A cell address is formed by the combination of a column letter and a row number. For example, in the image given alongside, the selected cell is the intersection of column B and row 3. Hence its address is B3.

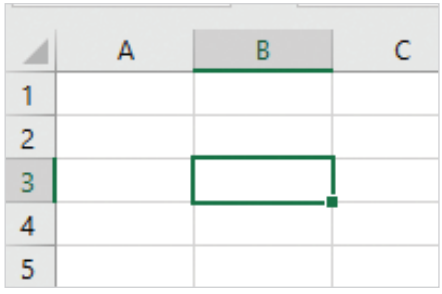


Fig. 8.4 Components of a worksheet

Range

A range is a group of adjoining cells. The range can be specified using the colon operator (:). To specify a cell range, the address of the first cell is written followed by a colon, which is followed by the ending cell address. For example, A1:A5 is a cell range starting from A1 and going up to A5.

Did You Know?

A cell can contain a maximum of 32,767 characters.

Column Headings

Each column in a worksheet is represented by a letter or a combination of letters. These are called column headings. These headings are named A, B, C, …, Z, AA, …, AZ, BA, …, BZ, AAA, …, ABA, …, XFD. There are 16,384 columns in every worksheet.

Row Headings

Each row in a worksheet is named using a number or combination of numbers, such as 1, 2, 3, ..., 1,048,576. These are known as row headings.

Did You Know?

The address of the last cell of Excel is XFD1048576.

Name Box

The Name Box is located below the ribbon on the left side of the window. It displays the address of the currently selected cell.

Formula Bar

The Formula Bar is located to the right of the Name Box. It displays the content you enter in a cell, such as text, numbers, or formulas.

Sheet Tabs

The Sheet tab is located on the status bar. There is only one worksheet in a workbook by default. The New sheet icon (plus sign) is used to add more worksheets to a workbook. There can be a maximum of 255 worksheets. You can switch to a different worksheet by clicking on it in the Sheet tab.

Remember

A workbook can contain multiple worksheets.

Workbook and Worksheet

A **workbook** is a file created in Excel. When you open Excel, the window that appears is a workbook. A **worksheet** is a grid of cells containing certain number of rows and columns. By default, a workbook is named Book1, and a worksheet is named Sheet1.

Now Jaya has understood functions of various components of Excel window.

Types of Data in Excel

Jaya's mother tells her that we can enter text, values, and formulas in Excel.

Type of Data	Description
Text	This includes some information, usually a combination of the letters of alphabet, such as Neha, Ramesh, and January.
Values	These include numbers and dates—for example, 236, 838.87, and 17/02/2018.
Formulas	These include formulas to perform calculations.

Entering Data

Jaya clicks on a cell and types her name.

'What next, Mom?' she asks.

'When you are done with entering data, press the Enter key to store it in the cell,' tells her mother.

Number Group

Jaya's mother tells her that sometimes when you enter numbers in Excel, it does not show decimal digits.

She makes her understand with the help of an example.

'If you enter the number 123.00, Excel will display the cell entry as '123'. To display decimals, you can set the number formatting,' says her mother.

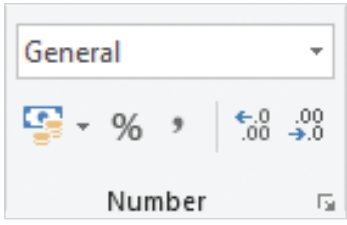


Fig. 8.5 Setting the number formatting

She describes the steps as follows—

- Select the cell(s).
- Under the **Home** tab in the **Number** group, click on the **Number Format** drop-down button and select the type of format.

She then selects the **Number** option. The cell changes to 123.00.

Her mother also tells her that she can set the formatting of text as date and currency also.

Jaya has now understood how to enter the data in Excel. She creates this worksheet.

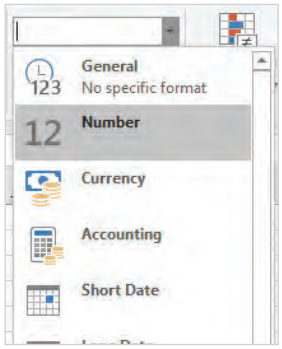


Fig. 8.6 Number group

	A	B	C	D	E
1	Place Value	Thousands (1000)	Hundreds (100)	Tens (10)	Ones
2	Prefix	Kilo	hecto	deca	
3	Measures of length	kilometre *(km)*	hectometre *(hm)*	decametre *(dam)*	metre *(m)*
4	Measures of mass	kilogram *(kg)*	hectogram *(hg)*	decagram *(dag)*	gram *(g)*

Fig. 8.7 Worksheet created

Selecting Cells

Her mother now tells her different ways of selecting cells.

- To select a single cell, simply click on that cell. A border will appear around that cell. This is known as cell pointer.
- To select more than one cell, you can drag your mouse over the cells you want to select.
- To select non-contiguous range of cells, select the cells, press and hold down the **Ctrl** key, and then select the ending range of cells.
- To select an entire row, click on the row header.
- To select an entire column, click on the column header.

Did You Know?

When you enter a number with a leading 0, Excel automatically removes this 0. For example, if you type 048 and press the Enter key, Excel will display it as 48. To display the leading zeros, put an apostrophe before the number. Excel will treat this entry as text.

Did You Know?

To move to the next line in a cell, press Alt + Enter keys.

Saving a Workbook

'Now it is time to save your work, Jaya,' tells her mother.

Jaya follows these steps to save her workbook.

1. She clicks on the **File** tab.
2. She clicks on the **Save** option.
3. The **Save As** pane appears on the screen.

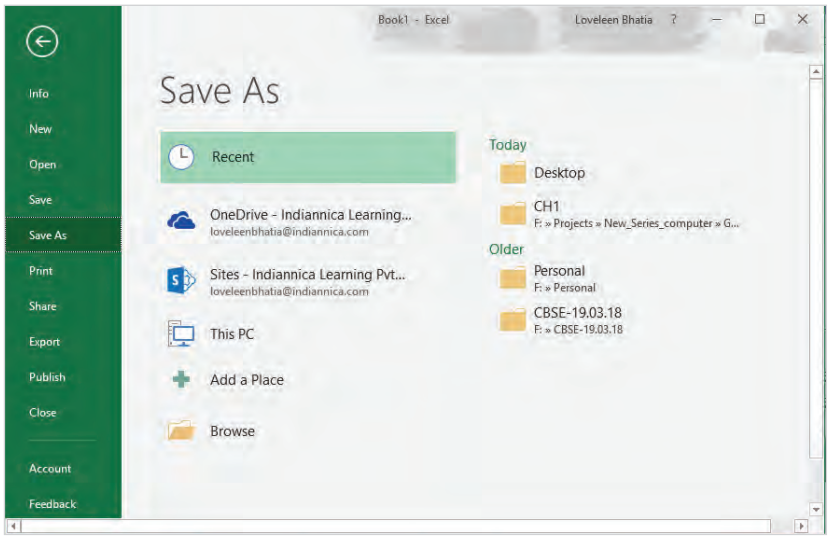


Fig. 8.8 Save As pane

Quick Tip

To select multiple cells, press and hold the Ctrl key and click on the cells you want to select.

4. She then clicks on the **Browse** option to choose a location for the file.
5. The **Save As** dialogue box appears. She selects the drive and folder where she wants to save the file.
6. She then types in the name for the file, and clicks on the **Save** button.

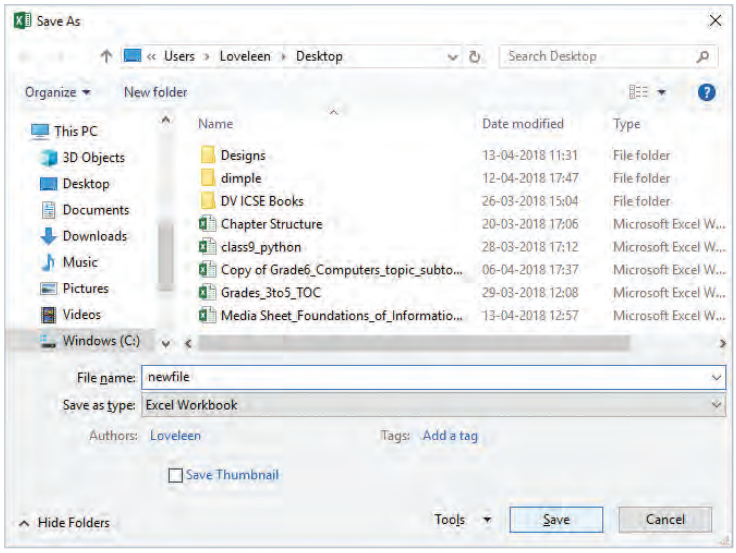


Fig. 8.9 Saving a workbook

7. The workbook gets saved.

Jaya notices that Excel workbook is saved with a '.xlsx' extension.

Checkpoint

Answer the following questions.

1. How are the rows and columns represented in Excel?
2. What is the default extension of a saved Excel file?
3. What is the use of the Name box?
4. How many columns are there in Excel?

Creating a Workbook

Jaya decides to create some more workbooks. She wants to open a new workbook. She then follows these steps.

1. Click on the **File** tab. The **Backstage** view will open.
2. Click on the **New** option. The Excel window will appear.
3. Choose a desired template or click on **Blank** workbook.

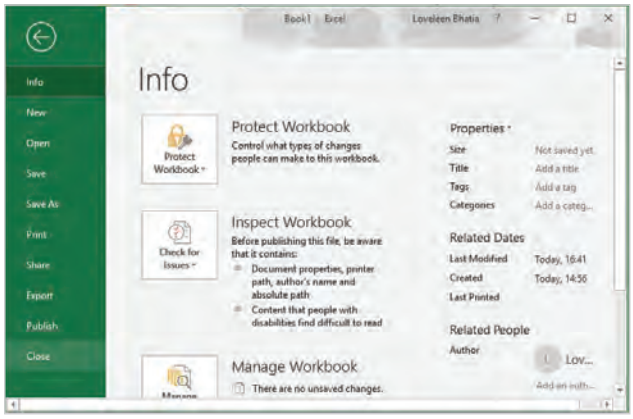


Fig. 8.10 New option

A new workbook titled **Book1** is created.

Exiting from Excel

Now Jaya wants to close the worksheet. She asks her mother if she can close the sheet by clicking on the **close** × button.

'Yes, but there is one more way to do this. Click on the **File** tab and select the **Close** option,' tells her mother.

Key Terms

Cell	The basic component formed by the intersection of a row and column
Range	A group of adjoining cells
Worksheet	A grid of cells containing certain number of rows and columns
Workbook	A file in Excel that contains multiple worksheets
Cell Pointer	A border that appears around a cell and indicates that it is active

Recap

- Microsoft Excel is a spreadsheet program that comes with Microsoft office suite. It lets us create worksheets.
- In Excel, text and numerical data can be entered and calculations can also be performed.
- A cell is the basic component of a worksheet, where data is entered. The intersection of a row and a column forms a cell.
- A range is a group of adjoining cells. The range is specified using the colon operator (:).
- Each column in a worksheet is represented by a letter or combination of letters. These are called column headings.
- A file created in Excel is called a workbook.
- A worksheet is a grid of cells containing certain number of rows and columns.

Exercise

A. Choose the correct options.

1. How many worksheets does a workbook of Excel contain by default?
   a) 4 b) 1 c) 2 d) 3
2. Which of the following is a valid cell address?
   a) 2A b) A22 c) A2B d) AA21BB
3. Which of the following components shows different worksheets of a workbook?
   a) Title bar b) Sheet tab
   c) Menu bar d) None of these
4. Which of the following types of data can be entered in an Excel sheet?
   a) Formulas b) Numbers c) Text d) All of these
5. Which of the following components shows the address of a currently selected cell?
   a) Name box b) Address box
   c) Cell box d) Formula box

B. Fill in the blanks.

1. A _____ is formed by the intersection of a row and a column.
2. The address of the cell formed by the combination of a _____ and a _____.
3. There are _____ rows and _____ columns in Excel.
4. A border that appears around a cell is called _____.
5. The _____ box displays the address of the selected cell.

C. Write T for *true* or F for *false*.

1. Clicking on the column header selects the cell.
2. A workbook can contain a maximum of 255 worksheets.
3. HH17 is a valid cell address.
4. The default extension of Excel file is '.xslx'.
5. The address of the first cell of Excel is 1A.

D. Answer the following questions.

1. What is a cell?
2. How is a cell address formed?
3. What is the difference between a workbook and a worksheet?
4. What does a formula bar represent?
5. Write the types of data that can be entered in an Excel sheet.

Application-based Questions

1. Rahul has opened a new Excel workbook. He is creating a time table. Help him in doing the following tasks.
   a) How can he add more worksheets?
   b) How will he select the entire column B?
   c) How can he select the entire worksheet?
2. Consider the worksheet shown and answer the questions given below.
   a) How will you select the range A8:B5?
   b) What is the address of the selected cell?

	A	B	C
1	Name	Favorite Sport	Favourite Color
2	Amit	Basketball	Red
3	Sugandha	Cricket	Black
4	Naina	Hockey	Yellow
5	Shibani	Football	Green
6	Rahul	Football	Red
7	Rohit	Basketball	White
8	Samaira	Cricket	Yellow
9	Riya	Hockey	Red

Lab Activity

1. Create an Excel sheet as shown. Save the worksheet with your name.

	A	B
1	Name	Blood Groups
2	Sunil	A
3	Yogesh	AB+
4	Himanshu	B
5	Rahul	AB+
6	Azmat	A
7	Aadesh	O
8	Neha	B
9	Samaria	B
10	Sonia	AB+

2. Given alongside is a worksheet that lists the Nobel prizewinners of the year 2017. Create a similar worksheet and add the names of more winners.

	A	B
1	Subject	Name of the winner
2	Physics	Rainer Wiess
3	Chemistry	Joachim Frank
4	Literature	Kazuo Ishiguro
5	Physiology	Michael Rosbash
6		

Project

1. Read about these rulers—
   - Ashoka
   - Shahjahan
   - Rani Lakshmi Bai
   - Akbar

   List out their major contributions and the ruling period in an Excel sheet.
2. Make a list of all the activities you do in a day. Now make a daily schedule involving all the activities in an Excel sheet.

Explore More

- Find out the keyboard shortcuts to navigate in Excel.

Work Wisely

It is important to set the number format while entering data. It helps us to manage a large amount of numerical data without confusion and get correct result of calculation.

Notes for the Teacher

- Discuss the advantages of Excel in the class.
- Make students familiarize with the components of Excel.

CHAPTER
9

Email

After going through this chapter, you will be able to—

- **create** an email account;
- **log in** to your email account, compose a mail, attach a file, and send a mail;
- **reply** and **forward** a mail;
- **add a signature** to a mail; and
- **manage** contacts.

Rahul studies in class 5 in AR Public School in Agra. Recently his best friend, Yogesh, has moved to Guwahati because his father has been transferred there. It's Yogesh's birthday tomorrow. Rahul wants to buy a birthday card and send it to Yogesh. Rahul's mother tells him that the card might not reach Yogesh by tomorrow.

Rahul is a little disappointed. He could not post a card to Yogesh as he was too busy preparing for the interschool badminton tournament, which is scheduled for next week. His elder brother, Ankit, tells him not to worry.

'I have a solution to your problem,' Ankit assured Rahul.

Rahul is thrilled. He wants to know how he can send the card to Yogesh.

'Rahul, you can send a beautiful birthday card to your friend right away,' Ankit tells Rahul.

Ankit now introduces Rahul to email. He explains to Rahul that email is a service like post and is used to send letters using the internet.

'I know about the internet. I studied it in class 4. But I want to know about email,' says Rahul.

The Internet

Ankit begins with telling Yogesh about the internet.

The internet is a global network of interconnected computers. Devices connected through the internet can communicate with each other and share information. Huge amount of information is available on the internet based on topics, such as research, news, books, products, technology, job vacancies, and healthcare. These pieces of information are usually stored in the form of text, pictures, audios, and videos on different web servers.

Uses of the Internet

Ankit then explains different uses of the internet.

1. You can search and access almost any kind of information on almost any topic.
2. Communication becomes easier and faster. You can send emails, do video conferencing, and connect with friends and family members through social networking sites using the internet.
3. You can advertise, buy, and sell different products using different e-shopping websites. This is called e-commerce.
4. You can use the internet to learn more and can also play online games, watch movies, and listen to songs.
5. Nowadays, the internet is used for carrying out online banking. Using it, we can pay bills, operate our bank accounts, book railways and air tickets, and do various other things.

For better understanding, Ankit lists out various applications of the internet—

1. Email
2. Social networking
3. Web browsing
4. Video conferencing
5. News updates
6. E-commerce

Email

Ankit now starts explaining email to Rahul.

'Email stands for electronic mail,' he tells Rahul.

He then emphasizes that it is the most widely used application on the internet.

'Emails are like letters sent from and to a computer through the internet. These electronic letters can be sent and received only when both the sender and receiver have access to the internet,' Ankit tells Rahul.

'How can I send an email?' Rahul asks Ankit.

Ankit then tells him that to send or receive emails, an email account is needed.

'There are many websites, such as Gmail and Yahoo! Mail, that allow people to open their email accounts free of charge,' Ankit informs Rahul.

Email Account

Ankit tells Rahul that for exchanging messages over the internet, an email account is required.

He further explains, 'An email account is a virtual address by which we can send messages over the internet. It is provided by an email account provider, and it contains information about our email address and password.'

Ankit gives some examples of email account providers—Google (mail.google.com), Yahoo! (mail.yahoo.com), Rediff (www.rediffmail.com), and Microsoft (https://outlook.live.com/).

Email Address

Rahul is curious to know more about an email address.

Ankit then explains email address to Rahul.

To send an email to someone, you need their email address or id. An email address is made up of two parts—username and domain name. A typical email address might read like cyberia@yahoo.com. Here, 'cyberia' is the username and 'yahoo.com' is the domain name.
The username and domain name are separated by the '@' (at) sign.

Did You Know?

The '@' symbol was suggested by Ray Tomlinson when the world's first email message was sent.

Creating an Email Account

Ankit now shows how to create an email account in Gmail.

'You need to first register as a new user and get your email address and a password to access the email regularly,' he tells Rahul and demonstrates the required steps to him.

1. He opens Google Chrome and searches for Gmail. He tells Rahul that any other browser can also be used.
2. He clicks on the Gmail link (https://www.google.com/gmail/) to launch the email application.

3. Then he clicks on **Create account** to create a Google account which opens up the registration form.
4. Then he shows him how to carefully fill the registration form with correct information.
5. He types in his full name, specifies a relevant username and password. He enters a secure password with a combination of upper-case and lower-case letters, numbers, and special characters.
6. He enters the password again to confirm it.
7. Then he clicks on **Next**. Google then checks for the availability of username. If it's available, then it will continue; else, a different username has to be given.

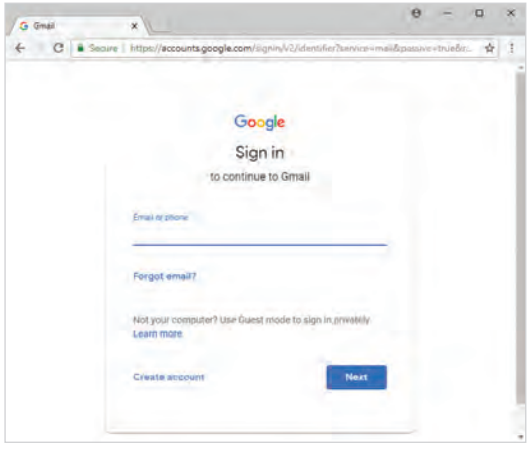


Fig. 9.1 Gmail sign in page

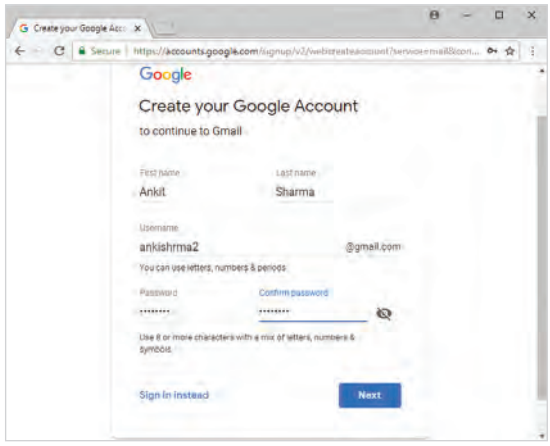


Fig. 9.2 Entering the credentials for registering in Gmail

8. Ankit now fills his personal information, such as data of birth and gender. He clicks on Next.
9. The next page shows **Privacy and Terms**. He clicks on **I agree**. This finishes the process.

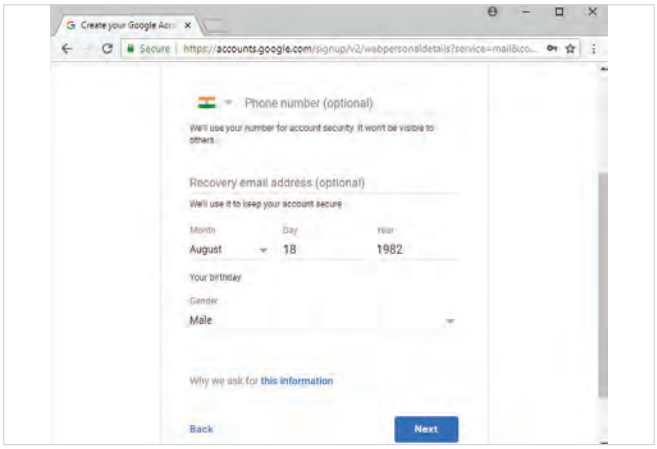


Fig. 9.3 Entering personal information

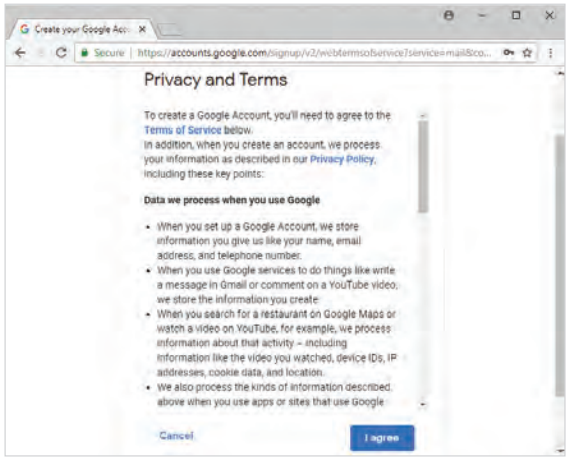

Privacy and Terms
To create a Google Account, you'll need to agree to the Terms of Service below.
In addition, when you create an account, we process your information as described in our Privacy Policy, including these key points:
Data we process when you use Google
Cancel
I agree

Fig. 9.4 Agreeing to Privacy and Terms

10. Gmail starts loading and the home page of Gmail opens.

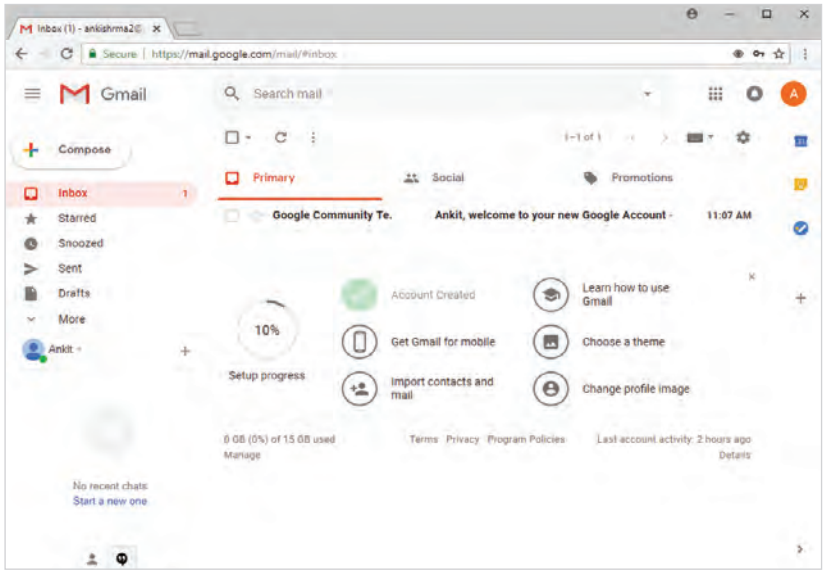


Fig. 9.5 Home page of Gmail

'Always remember your email address and password. Always log out after using it,' Ankit tells Rahul.

'What if I want to log in again?' says Ankit.

Then Ankit shows to Rahul how to sign in again.

1. Open the Gmail and type the username.
2. Then click on **Next**.
3. On next page, enter password and click on **Next**.

'Now you are logged in,' he tells Rahul.

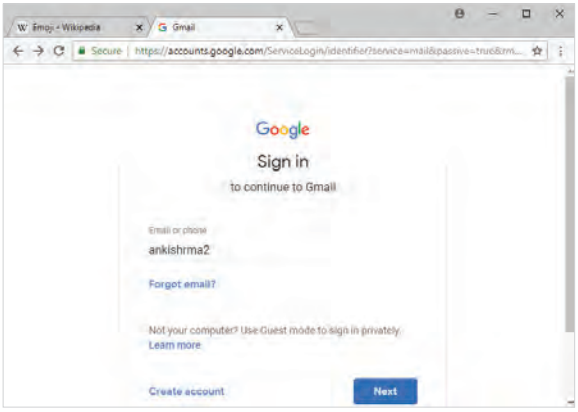


Fig. 9.6 Signing in to Gmail—entering username

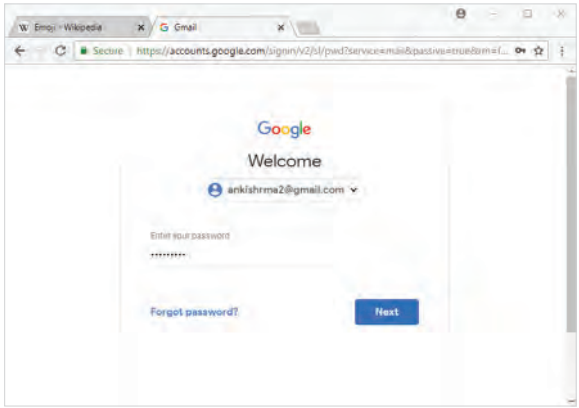


Fig. 9.7 Signing in to Gmail—entering password

Now Ankit instructs Rahul how to sign out.

Click on the **Google Account** icon and then click on the **Sign out** to sign out from the Gmail.

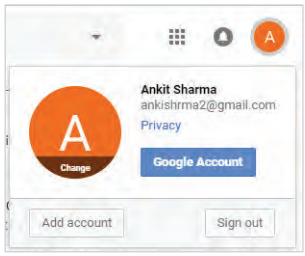


Fig. 9.8 Signing out from Gmail

Layout of an Email Account

Ankit shows to Rahul various components of an email account.

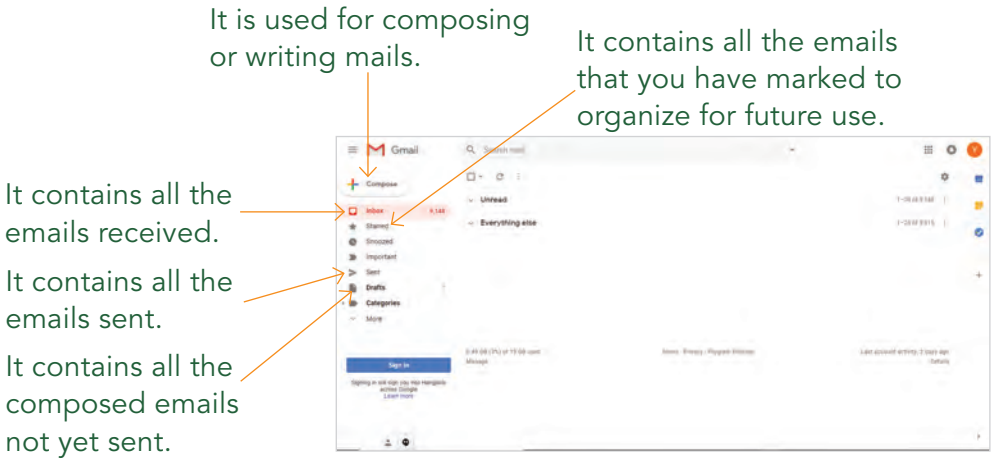

It is used for composing or writing mails.
It contains all the emails that you have marked to organize for future use.
It contains all the emails received.
It contains all the emails sent.
It contains all the composed emails not yet sent.

Fig. 9.9 Components of Gmail

Sending an Email

Ankit helps Rahul open an email account for him in Gmail. Rahul now wants to send a thank-you mail to Ankit.

Ankit guides Rahul how to send an email.

1. Ankit asks Rahul to click on **Compose** in the Gmail account. He tells Rahul that on some websites, it is named as New.
2. A new window opens. Rahul types Ankit's email address in the **To** box. Ankit tells Rahul that if he wants to send the same email to many persons, he needs to click on **Cc** or **Bcc** options and type their email addresses therein.
3. Ankit asks Rahul to type the **subject** of his message in the Subject box. Rahul types 'Thank you'.
4. Rahul now types his message in the blank space below the **Subject** box.
5. Rahul clicks on **Send**. The mail is sent to Ankit.

Did You Know?

Cc stands for carbon copy. The email addresses given here are visible to all other recipients.

Bcc stands for blind carbon copy. It shows that a copy of the email is being sent to another person whose name and address cannot be seen by the recipients.

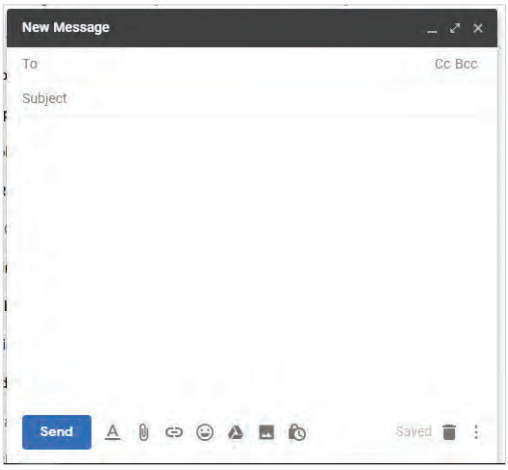


Fig. 9.10 New Message box

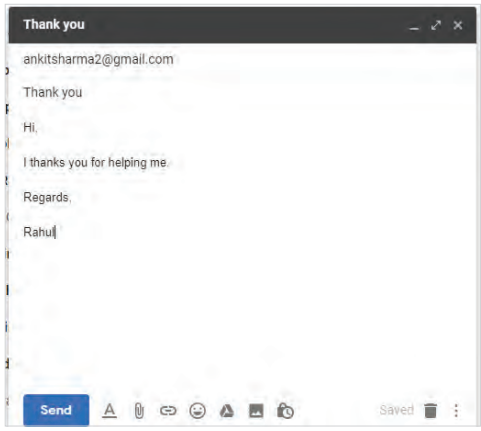


Fig. 9.11 Composing an email

Attaching a File

Rahul is all set now to send the birthday card to his best friend, Yogesh. He made a beautiful birthday card for him in Tux Paint and saved it as a JPEG file.

1. Rahul first types the email address of Yogesh and types 'Birthday wishes' as the subject. He types the message. Now Ankit asks him to click on **Attach files**. A dialogue box opens.
2. Ankit asks Rahul to find and select the file that he wants to send.

   Rahul finds the picture of the birthday card saved on the desktop. He clicks on **Open**.

3. The file is attached to the email. Rahul clicks on **Send**.

The email with the birthday card attached with it is sent to Yogesh. Rahul is happy now.

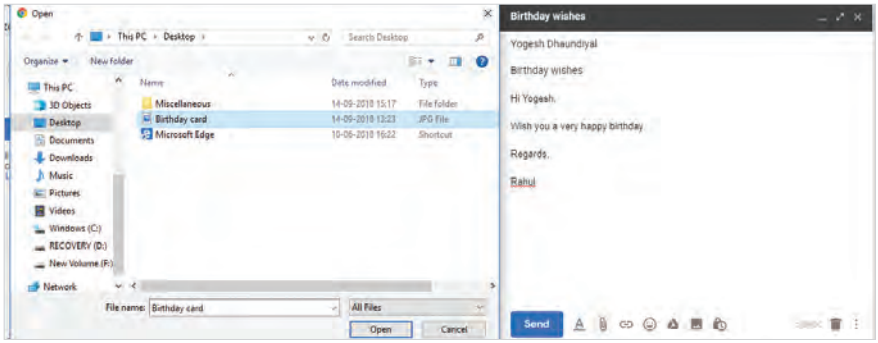


Fig. 9.12 Attaching a file to an email

Actions for an Email Message

Ankit tells Rahul about some actions that can be performed on email messages.

Reply: It helps you to reply to an email message sent to you. The address of the sender automatically appears in the To box.

Forward: This forwards the message to another person. All you need to do is type the email address of the person you want to forward the message to.

Delete: This deletes the message from any of the folders.

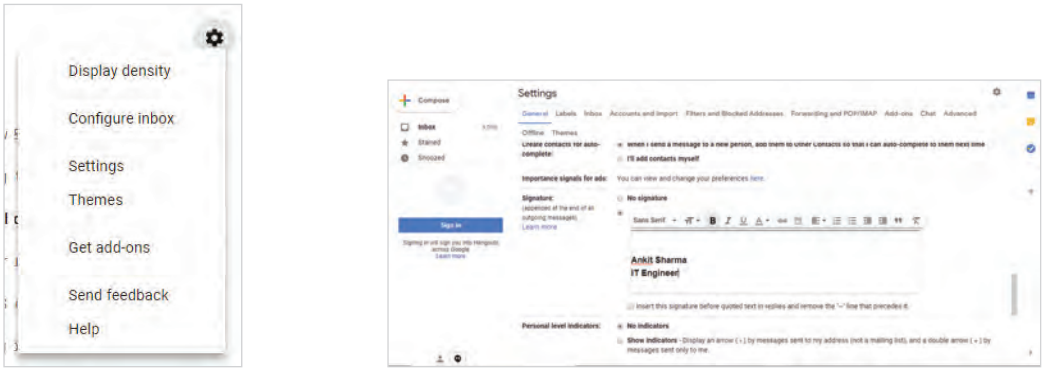
Print: This prints the message.

Move: This helps you move the message to other folders.

Adding a Signature to a Mail

Ankit tells Rahul that adding a signature lets you add a customized text at the bottom of your emails. He opens his email account and shows the steps to add a signature.

1. Ankit clicks on the **Settings** icon and then on **Settings**.
2. Then he searches for **Signature** in the **General** section.
3. He defines the signature to be used in text box given and clicks on **Save Changes** to finish the process.



a) b)

Fig. 9.13 Adding a signature to an email

Ankit sent an email to Rahul and shows to him how the signature appears.

'The signature that I have just added will be displayed whenever I send an email,' Ankit tells Rahul.

Managing Contacts, Address Books, and Groups

Ankita then inform Rahul about managing contacts, and updating address books.

Adding and Managing Contacts

Ankit now shows to Rahul how to add and manage contacts.

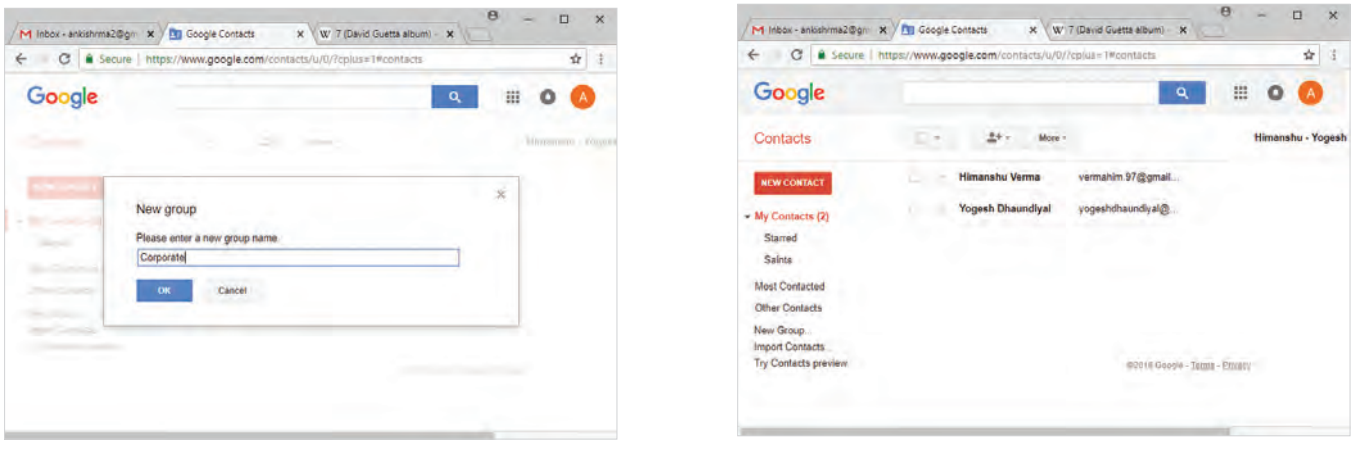
1. On the Gmail home page, he clicks on the **Google apps** icon, which shows a small pop-up window.
2. Then he clicks on **Google Account**, which opens up a new window.
3. Then he searches for **Contacts** under **Personal info & privacy** and clicks on it.
4. In the next page, he searches for **GO TO CONTACTS** and clicks on it. **Google Accounts** page opens up.
5. To add a new contact, he clicks on **NEW CONTACT** or **+** icon on the bottom right side.
6. A new pop-up window of **Create contact** opens up. He then fills the required info such as name, email address, phone number, and company name.

Creating Groups

'To manage a contact, it is essential to switch over to the old version,' Ankit tells Rahul.

Ankit guides Rahul through the following steps.

1. Ankit clicks on the **Switch to the old version** option and tells Rahul to search for **New Group...** and click on it. A new pop-up window opens.
2. Ankit enters the desired group name as '**Corporate'** and clicks on **OK**. The new group gets created.

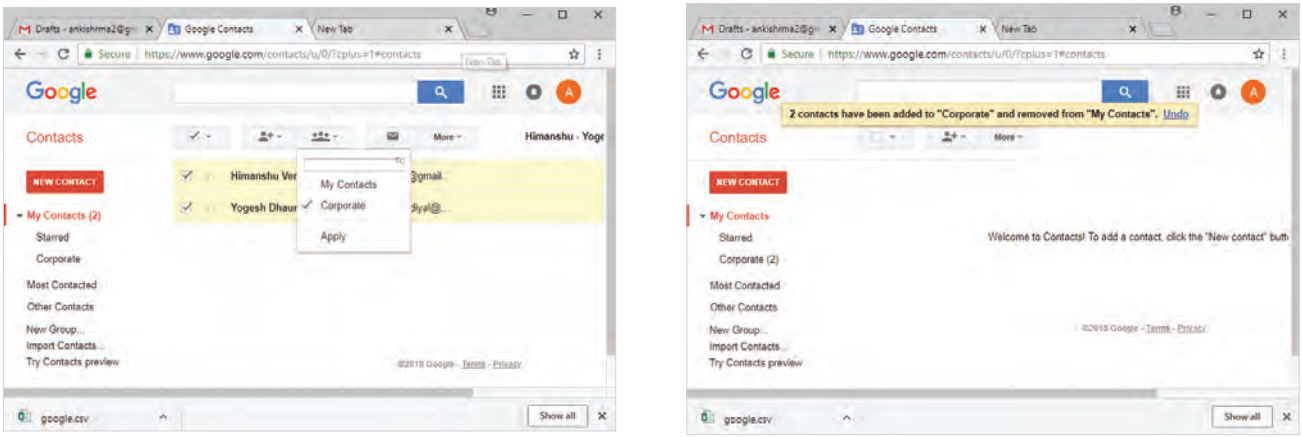


a) b)

Fig. 9.14 Creating a new group

3. Now to add the contacts to this group, Ankit ticks the contacts to be added.

4. Ankit now clicks on **Groups**, changes the group from **My Contacts** to **Corporate**, and clicks on **Apply**. The contacts get moved to the group **Corporate**.



a) b)

Fig. 9.15 Moving contacts to a new group

Netiquette

Lastly, Ankit tells Rahul that some netiquette needs to be followed while sending an email.

- If you are forwarding or reposting a message, avoid changing the meaning or essence of the original message.
- Always make sure who the recipients of a mail are. Sometimes, you may send it to a wrong address.
- When you send emails to people, give them enough time to read and reply before assuming that they have not intentionally replied.
- Avoid using upper case to write an email. Using upper case signifies that you are shouting and being rude to the other person.
- Try to be brief while writing emails.
- Avoid composing your email too quickly. Give enough thought and be respectful while writing an email.
- Never send an email without a subject in the message.
- Try to include a signature at the end of the message to make it more authentic and personal.
- Avoid including your email signature again and again in the same email conversation to avoid clutter.
- Always be pleasant when you begin a formal email. Always start with pleasant words, such as 'Dear…', 'Hi', and 'Hello', and make sure you end the email on a thankful note. Be polite yet brief with your courtesy.

- Avoid emailing anyone when you are angry.
- Try not to use Bcc (blind carbon copy) too often. Bcc is supposed to be used as a confidential email.
- Be careful while using the Reply All option. Sometimes, we need to send replies to only the sender and not to everyone marked in the email.
- Sending the reply to everyone may be irritating for the recipients in the mail chain. Use the Reply option in such cases. On the other hand, never omit anyone from the group if you are using the Reply All option.
- We should not send false rumours or unsolicited emails. Also, forwarding emails without finding out if the recipient is receptive to them is unethical.

Checkpoint

Answer the following questions.

1. Write any five ways in which the internet is beneficial for you.
2. Differentiate between carbon copy and blind carbon copy.
3. Differentiate between Reply and Forward options.

Key Terms

Internet	A global network of interconnected computers
Email account	A virtual address using which we can send messages over the internet
Domain name	A name that identifies a website or group of websites

Recap

- Emails are like letters that can be sent and received through the internet via an email account.
- We can even send Word files, Excel sheets, or pictures by attaching them to an email.
- Email is the most popular method of communication. It is fast and reaches destination within a short time.
- An email address has a username and a domain name, and both are separated by a symbol '@'.
- To create an email account, it is required to go to a service provider site, fill a form, and register, before starting using email services.
- The features of an email account are compose, sent mail, replying, forwarding, attachment of a file, change settings, label, and deleting messages.

Exercise

A. Choose the correct options.

1. Which of the following is also the name of the website in an email address?
   a) @ b) local-part
   c) domain name d) username
2. Who suggested the use of the '@' symbol while writing the first email?
   a) Tim Berners-Lee b) Ray Tomlinson
   c) Charles Babbage d) None of these
3. In your email account, where will you find all the emails that you have received?
   a) To b) Compose c) Draft d) Inbox
4. Which option will you choose to send a copy of the mail to a list of recipients.
   a) aa b) bb c) cc d) dd
5. Which of the following symbols separates the username with the domian name in an Email id?
   a) $ b) & c) % d) @

B. Fill in the blanks.

1. Advertising, buying, and selling of different products using different e-shopping websites is called _____.
2. The _____ symbol separates the username from the domain name.
3. The _____ contains the deleted emails and gets emptied automatically on reaching a certain limit.
4. _____ folder is recognised as junk in Gmail.

C. Write T for *true* or F for *false*.

1. Bcc stands for Black carbon copy. ☐
2. Cc allows you to direct a copy of your mail to the concerned person. ☐
3. We should avoid using upper case in writing an email. ☐
4. A secure password is a combination of upper-case and lower-case letters, numbers, and special characters. ☐
5. An email can be without an email address of a recipient. ☐

D. Answer the following questions.

1. Write any three examples of email account providers.
2. Write a short note on 'email'.
3. Define vital information resource under seize. Give two examples.
4. Write any three methods to protect the computer system from malware attack.
5. What is the basic difference between Bcc and Cc in an email?

Application-based Questions

1. Preeti, while registering on Gmail, is typing the username as preeti@123. Gmail gives a message showing that some characters can't be used. What can you suggest her so that she will be able to register on Gmail?
2. Yogesh received an email attachment from an unknown user. What would you suggest him to do next?

Lab Activity

1. With your teacher's assistance, make an email account on Microsoft Outlook.
2. Write an email to one of your friends. Attach a file as well.
3. Make an email account on Gmail and compare it with that made in Microsoft Outlook.

Project

1. Visit your school computer lab and explore antivirus installed on one of the systems. Search about the same over the internet for its unique features. Prepare a report on the same.
2. On creating an account on Gmail, you are actually creating one account for all your Google services, such as Google Drive, Google books, and Google Maps. Explore about all of these. Take the help of your teacher.
3. Search the internet for getting information on Artificial Intelligence (AI). Prepare a report for the same.

Explore More

- Explore Microsoft's another email client 'Mail' on the internet.
- Using the internet, find the difference between firewall and antivirus.

Weblinks

https://whatismyipaddress.com/web-browser

Work Wisely

Always go through the draft mail and run spell check on it before sending it to the recipient.

Notes for the Teacher

- Emphasize how email has revolutionized the way we communicate with each other.
- Encourage students to use polite language in writing emails and spread positive messages through emails.

Worksheet 1

A. Choose the correct options.

1. Which of the following technology was used in first-generation computers?

   a) Vacuum tube b) Transistor

   c) Integrated circuit d) Microprocessors

2. Which key will you use to move to the next cell in a table?

   a) Shift + Tab b) Tab c) Ctrl + Tab d) Alt + Tab

3. In which of the following groups the SmartArt button is found in PowerPoint?

   a) Paragraph b) Illustrations c) Images d) Text

4. Which of the following blocks in Scratch are used to perform arithmetic calculations?

   a) Sensing b) Events c) Operators d) Data

5. Which of the following symbols separates the user name and the domain name of an email address?

   a) * b) @ c) $ d) #

B. Define the following terms.

1. GUI
2. Variable
3. Workbook
4. Cell
5. Netiquette

C. Fill in the blanks.

1. The _____ tool is used to exit from Tux Paint.
2. To insert table in Word, click on the _____ tab.
3. The data source can be created using _____, _____, and _____.
4. The default file extension of an Excel file is _____.
5. The _____ is global network of interconnected computers.

Worksheet 2

A. Write the keyboard shortcuts for the following.

1. To switch between opened applications in Windows
2. To end a slide show
3. To move backwards to a cell
4. To stop the screen recording in PowerPoint
5. To remove the blocks from a program in Scratch

B. State true or false for the following statements.

1. The rows in Excel are represented by the letters A, B, C, and so on.
2. To send an email, you must have an email id.
3. Analytical engine was invented by Charles Babbage.
4. The Print tool is used to print the drawing created in Tux Paint.
5. It is not possible to resize a tile appearing on the Start menu.

C. Name the tab and group that has the commands to carry out the following.

1. To create a photo album in PowerPoint
2. To view the merged data
3. To apply border to a table
4. To merge and split cells in a table